

S The IUPAC nomenclature of elements > 100

In IUPAC system, the names are derived by using roots for the three digits in the atomic number of the element and adding the ending : ium. The roots for the numbers are

Number	0	1	2	3	4	5	6	7	8	9		
Root	nil	un	bi	tri	quad	pent	hex	hept	oct	enn		
Atomic												
Number					Name				Symł	loc		
101				un-	nil-uniu	m		Unu				
102				un	-nil-biun	ı			Un	Ь		
103				un	-nil-triui	n			Ur	ıt		
104				un	-nil-qua	lium			Unq	I		
105				un	-nil-pent	ium			Սոբ)		
106				un	-nil-hexi	um			Unh			
107				un	-nil-sept	ium	Uns					
108				un	-nil-octi	ım		Uno				
109				un	-nil-enni	um	Une					
110				un-	un-niliu	m	Uun					
111				un-ı	ın-uniur	n	Uuu					
112				un-	un-bium	1	Uub					
113				un-	un-triun	ı	Uut					
114				un-	un-quad	ium			Uuq			
115				un-	un-pent	ium			Uup			
116				un-	un-hexiu	ım	Uuh					
117				un-	un-septi	um		Uus				
118				un-	un-octiu	m			Uu	0		
119				un-	un-enni	um			Uu	e		

- Elements of second period are known as Bridge elements. Their properties resemble with the properties of diagonal elements of third period.
- For isoelectronic ions the size depends on the nuclear charge. Greater is the nuclear charge smaller is the size.
- The incease in magnitude of radii is more in the beginning of a group because the difference in energy between energy shells is more.
- The ionisation potentials provide an indication about the number of valence electrons (s) in an atom e.g., Na has IE >>> IE (because it has one valence electron) while Mg has IE >>> IE > IE because it has two valence electrons and attains noble gas configuration after losing 2 electrons.
- E The highest I.E. in a period is shown by noble gas.
- ✓ The electronegativity of a series of transition metals is almost similar. The electronegativity of all lanthanide's are identical (≈1.1).
- ✗ The most electronegative elements is Fluorine (value is 4.0 on the Pauling scale). The least electronegative elements is *Cs* and *Fr* with a value of 0.700.

- The electron affinity of exactly half-filled configuration is approximately zero and exactly zero for fully filled configuration.
- X The electron affinities of gaseous anions are always negative.
- Some of the polar crystals when heated produce electric current. This phenomena is termed as piezoelectric effect.
- \bigstar All the elements of f block (4f series Lanthanides and 5f series Actinides) are placed in 3rd group (IIIB) and form a separate block at the bottom of the periodic table.



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	(a) 33 (b) 34	25.	Which of the following elements is a lanthanide (Rare–earth
11	(c) 31 (d) 49		(a) Cadmium (b) Californium
11.	n the periodic table, the element with atomic number to will be placed in the group [MP PET/PMT 1998]		(c) Cerium (d) Cesium
	(a) Third (b) Fourth	26.	Mendeleef's periodic law is based on
	(c) Fifth (d) Sixth		(a) Atomic weight (b) Atomic number
12.	The first element of rare-earth metals is [AFMC 1992]		(c) Number of neutrons (d) None of the above
	(a) Cerium (b) Actinium	27.	The heaviest atom amongst the following is
	(c) Uranium (d) Lanthanum		[CPMT 1976; NCERT 1976]
13.	The <i>d</i> -block elements consists mostly of [MP PMT 1994]		(a) U (b) Ra
	(a) Monovalent metals	-	(c) <i>Pb</i> (d) <i>Hg</i>
	(b) All non-metals	28.	Which of the following pairs has both members from the same
	(c) Elements which generally form stoichiometric metal oxide		group of the periodic table
	(d) Many metals with catalytic properties		$\begin{bmatrix} CrM1 1903; Mr FL1/rM1 1990] \\ (-) Ma Pa (-) Ma Na \end{bmatrix}$
14.	"The 6 properties of the elements are periodic function of their		(a) $Mg - Da$ (b) $Mg - Na$
	atomic numbers." The statement was given by		(c) $Mg - Cu$ (d) $Mg - K$
	[MNR 1995]	29 .	Which of the following pairs has both members from the same
	(a) N. Bohr (b) J.W. Dobereiner		period of the periodic table
	(c) D.I. Mendeleef (d) H.G.J. Moseley		[CPMT 1985; UPSEAT 2001; BHU 2003]
15.	The long form of periodic table has		(a) $Na - Ca$ (b) $Na - Cl$
	[CPMT 1986; KCET 1998]		(c) $Ca - Cl$ (d) $Cl - Br$
	(a) Eight horizontal rows and seven vertical columns	30.	Diagonal relationship is shown by [DPMT 1984]
	(b) Seven norizontal rows and eighteen vertical columns		(a) Elements of first period (1) Σ^{1}
	(c) Seven horizontal rows and seven vertical columns		(b) Elements of second period
16	(d) Eight horizontal rows and eight vertical columns		(d) (b) and (c) both
10.	(a) Do Chan Countain (b) Newlands	21	The elements having the electronic configuration $[Kr]$
	(a) De Chan Courtois (b) Newdalias	31.	A 10 cl4 5 2 6 12 c 2 1 1
17	Which one of the following belongs to representative group of		$4a^{-5}f^{-7}, 5s^{-}p^{-4}a^{-}, 6s^{-}$ belongs to [CPMT 1982]
17.	elements in the periodic table [Kurukshetra CEE 1991]		(a) <i>s</i> -block (b) <i>p</i> -block
	(a) Lanthanum (b) Argon		(c) <i>d</i> -block (d) <i>f</i> -block
	(c) Chromium (d) Aluminium	32.	Chemical property of <i>Li</i> and <i>Mg</i> similar because
18.	An element of atomic number 29 belongs to		[RPMT 2002]
	[CPMT 1991; Kurukshetra CEE 1991; MP PET 2001]		(a) These belong to same group
	(a) <i>s</i> -block (b) <i>p</i> -block		(b) Both ionisation potential is same
	(c) d -block (d) f -block		(c) Shows diagonal relationship
10	The element californium belongs to the family		(d) Both electron aminity is same
19.	[MNR 1087]	33.	properties of elements is related to their [AIEEE 2003]
	(a) Actinide series (b) Alkali metal family		(a) Atomic masses
	(c) Alkaline earth family (d) Lanthanide series		(b) Nuclear masses
20.	On moving from left to right across a period in the table the		(c) Atomic numbers
	metallic character [CPMT 1986]		(d) Nuclear neutron-proton number
	(a) Increases	34.	The element with atomic number 36 belongs to block in the
	(b) Decreases		periodic table [KCET 2003]
	(c) Remains constant		(a) <i>p</i> (b) <i>s</i>
	(d) First increases and then decreases		(c) <i>f</i> (d) <i>d</i>
21.	An element with atomic number 20 will be placed in which period	35.	Which group of the periodic table contains only metals
	(a) 4 (b) 3		[UPSEAT 2003]
	$\begin{array}{c} (c) & q \\ (c) & 2 \\ (d) & 1 \\ \end{array}$		(a) IIA (b) IB
	(-) = $(-)$ $(-$		(c) IA (d) None of these
22.	The electronic structure $(n-1)a$ is characteristic of	36.	The elements in which <i>s</i> and <i>p</i> -orbitals are present
	[CET Pune 1998]		(a) Common elements
	(a) Transition elements (b) Lanthanides		(b) Inert gases
22	(c) Actinides (d) Kare gases	76 1	(c) Halogens
23.	(a) Light metals (b) loant races	וסע	(d) Transitional elements
	(a) Light metals (b) mert gases	37.	Aluminium is diagonally related to (in periodic table)
24	(c) naiogenis (u) naiogenis (c) Mar edituis		[MP PET 1993]
	(a) IV group (b) IV period		(a) <i>Li</i> (b) <i>C</i>
	(c) VI group (d) III group		(c) B (d) Be

	An element has the electronic configuration $1s^2$, $2s^2 2p^6$,	50.
	$3s^2 3p^6 3d^5, 4s^1$. It is a	0
	(a) <i>s</i> -block element (b) <i>p</i> -block element	
	(c) <i>d</i> -block element (d) Inert gas	51
9.	Which of the following show diagonal relationship	51.
	[KCET 2003; MP PMT 2003]	
	(a) B and SI (b) B and AI	
n	Which of the following dinegative anion is quite common	
	[CPMT 2000]	
	(a) S^{2-} (b) Se^{2-}	52.
	(b) T^{2-} (b) S^{2-}	
	(c) Ie^2 (d) O^2	
•	An element has electronic configuration $1s^2 2s^2 2p^6 3s^2 3p^4$.	
	Predict their period, group and block	
	(2) Period = 2° block = n group = 16	53.
	(a) Period = 5°, block = s , group = 1	
	(c) Period = 3° , block = p , group = 10	
	(d) Period = 4° , block = d , group = 12	
2.	If the atomic number of an element is 33, it will be placed in the	
	periodic table in the [RPET 1999; UPSEAT 2001, 02]	54.
	(a) First <i>gp</i> (b) Third <i>gp</i>	
	(c) Fifth gp (d) Seventh gp	
5.	which of the following is the atomic number of a metal [AllMS 2000]	55.
	(a) 32 (b) 34	
	(c) 36 (d) 38	
ŀ.	Which of the following statement is not correct regarding hydrogen	
	atom [AIIMS 2000]	50.
	(b) It resembles alkali metals in some properties	
	(c) It can be placed in 7 ^e group of periodic table	57.
	$(d) \ \ \mbox{It can not be placed in first group of periodic table}$	
5.	Lithium shows similarities to magnesium in its chemical behaviour	
	(a) Similar size, same electronegativity and lower polarizing power	
	(b) Similar size, greater electronegativity and similar polarizing	
	power	58.
	(c) Similar size, same electronegativity and similar high polarizing	
	(d) None of these	
	On going left to right in a period, in transition metals, their atomic	59.
5.	volumes [MP PMT 2002]	
5.		
5.	(a) Decrease (b) Increase	
5.	(a) Decrease (b) Increase (c) Remain same (d) None of these of correct Electronic configuration of chalcons in their outermost orbit is	60.
ō. 7.	(a) Decrease (b) Increase (c) Remain same (d) None of these of correct Electronic configuration of chalcons in their outermost orbit is (c) $e^2 n^3$ (b) $e^2 n^4$	60.
5. 7.	(a) Decrease (b) Increase (c) Remain same (d) None of these of correct Electronic configuration of chalcons in their outermost orbit is (a) $s^2 p^3$ (b) $s^2 p^4$	60.
5. 7.	(a) Decrease (b) Increase (c) Remain same (d) None of these of correct Electronic configuration of chalcons in their outermost orbit is (a) s^2p^3 (b) s^2p^4 (c) s^2p^5 (d) s^2p^6	60.
5. 7. 8.	(a) Decrease (b) Increase (c) Remain same (d) None of these of correct Electronic configuration of chalcons in their outermost orbit is (a) $s^2 p^3$ (b) $s^2 p^4$ (c) $s^2 p^5$ (d) $s^2 p^6$ Which configuration represents a noble gas [DPMT 2000]	60. 61.
5. 7. 8.	(a) Decrease (b) Increase (c) Remain same (d) None of these of correct Electronic configuration of chalcons in their outermost orbit is (a) s^2p^3 (b) s^2p^4 (c) s^2p^5 (d) s^2p^6 Which configuration represents a noble gas [DPMT 2000] (a) $1s^22s^22p^63s^23p^63d^{10}4s^2$	60. 61.
5. 7. 3.	(a) Decrease (b) Increase (c) Remain same (d) None of these of correct Electronic configuration of chalcons in their outermost orbit is (a) s^2p^3 (b) s^2p^4 (c) s^2p^5 (d) s^2p^6 Which configuration represents a noble gas [DPMT 2000] (a) $1s^22s^22p^63s^23p^63d^{10}4s^2$ (b) $1s^22s^22p^63s^23p^6$	60. 61.
6. 7. 3.	(a) Decrease (b) Increase (c) Remain same (d) None of these of correct Electronic configuration of chalcons in their outermost orbit is (a) s^2p^3 (b) s^2p^4 (c) s^2p^5 (d) s^2p^6 Which configuration represents a noble gas [DPMT 2000] (a) $1s^22s^22p^63s^23p^63d^{10}4s^2$ (b) $1s^22s^22p^63s^23p^6$ (c) $1s^22s^22p^63s^23p^6$	60. 61.
5. 7.	(a) Decrease (b) Increase (c) Remain same (d) None of these of correct Electronic configuration of chalcons in their outermost orbit is (a) s^2p^3 (b) s^2p^4 (c) s^2p^5 (d) s^2p^6 Which configuration represents a noble gas [DPMT 2000] (a) $1s^22s^22p^63s^23p^63d^{10}4s^2$ (b) $1s^22s^22p^63s^23p^6$ (c) $1s^22s^22p^63s^2$	60. 61. 62.
5. 7. 3.	(a) Decrease (b) Increase (c) Remain same (d) None of these of correct Electronic configuration of chalcons in their outermost orbit is (a) s^2p^3 (b) s^2p^4 (c) s^2p^5 (d) s^2p^6 Which configuration represents a noble gas [DPMT 2000] (a) $1s^22s^22p^63s^23p^63d^{10}4s^2$ (b) $1s^22s^22p^63s^23p^6$ (c) $1s^22s^22p^63s^2$ (d) $1s^22s^22p^63s^2$	60. 61. 62.

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	(c) As , Bi (d)) Pb, Sb
50.	Dobereiner traids is	[RPMT 1997]
	(a) Na , K , Rb (b)) Mg , S , As
	(c) Cl , Br , I (d)) P, S, As
51.	As per the modern periodic law	v, the physical and chemical
	properties of elements are periodic fr	Inctions of their
	(a) Atomic volume	FMT 1997; EAMCET 1990]
	(b) Electronic configuration	
	(c) Atomic weight	
	(d) Atomic size	
52.	Elements after atomic number 103 h	have been discovered till now. If
	the following electronic configuration	will it possess [AllMS 1982]
	(a) $[Rn]5f^{14} 6d^4 7s^2$ (b)	$[Rn]5f^{14}6d^57s^1$
	(c) $[Rn]5f^{11}6d^{67}/s^{6}$ (d)	$[Rn]5f^{*}6d^{*}/s^{2}/p^{3}$
53.	The element X , Y , Z and T configurations Starting with the inn	have the indicated electronic
	metallic element	[CPMT 1979, 93]
	(a) $X = 2, 8, 4$ (b)) $Y = 2, 8, 8$
	(c) $Z = 2, 8, 8, 1$ (d)) $T = 2, 8, 8, 7$
54.	Which pair of atomic numbers repre	sents <i>s</i> -block elements
	[EAMCI	ET 1990; RPMT 1997; MP PET 2003]
	(a) 7, 15 (b)) 6, 12
EE	(c) 9, 17 (d) Which pair of elements has same che) 3, 12
55.	which pair of elements has same che	[EAMCET 1987]
	(a) 13, 22 (b)) 3, 11
	(c) 4, 24 (d) 2, 4
56.	Mosley's name is most closely associa	ited with the discovery of
	(a) Positron (b)) Deutrons
57.	In the periodic table going down in f	luorine group
		[CPMT 1981]
	(a) Reactivity will increase	
	(b) Electronegativity will increase	
	(d) Ionization potential will increase	5
58.	Beryllium resembles much with	[CPMT 1988]
	(a) Zn (b)) Al
	(c) <i>Li</i> (d)) <i>Ra</i>
59.	The last member in each period of th	ne periodic table is
	(a) An inart gas element (b)	[DPMT 2001]
	(c) A halogen (d) An alkali metal
60.	Which one of the following com	bination represents a metallic
	element	[EAMCET 1979]
	(a) 2, 8, 7 (b)) 2, 8, 8
		, 2, 0, 2
61.	The electronic configuration of an	$1 \text{ atom } A \text{ is } 1s^2, 2s^2p^3,$
	$3s^2p^6d^{10}, 4s^2p^3$. The chemistry	of A is therefore likely to be
	similar to that of	[MP PMT 1995]
	(a) Chiorine (b)) Nitrogen
62	The element begins the -1-	$\frac{1}{2}$
02.	$2a^2 2a^6 2a^2 2a^1$	ctronic conngulation 13,
	2s 2p, $5s 5p$ is	
	(a) A transition element	
	(b) A representative element	

- [Kurukshetra CEE 1998; AFMC 2

 (a) N, O
 (b) Na, Ca
- (c) An inert gas

(d) An inner-transition element Chemical behaviour of an atom is determined by 75. (a) Atomic number (b) Mass number The element with configuration $1s^2$, $2s^2p^6$, $3s^2$ would be 63. (c) Binding energy (d) Number of isotopes [CPMT 1986; MP PMT 1993] 76. Which of the following is a inert element (a) A metal (b) A non-metal (a) *Na* (b) *Fe* (c) An inert gas (d) A metalloid (c) Li (d) *He* The long form of periodic table is based on [CPMT 1997] 64. The lightest metal is 77. (a) Shape of the atom [CPMT 1976; NCERT 1976; AFMC 1988] (b) Mass of the atom (a) *Li* (b) Mg Atomic number of the atom (c) Ca Na Electronegativity (c) (d) (d) Choose the typical element 78. Chloride of an element A gives neutral solution in water. In the 65. (b) Na (a) K periodic table, the element A belongs to (d) *He* [AIIMS 1992; UPSEAT 2001] (c) *Sc* Of the following pairs, the one containing example of metalloid (a) First group 79. (b) Third group elements in the periodic table is (c) Fifth group (d) First transition series Sodium and potassium (a) The fundamental basis of the present-day Periodic Table is that 66. Fluorine and chlorine (b) elements are [JIPMER 1999] Calcium and magnesium (c) (a) Arranged in the order of increasing atomic weights (d) Boron and silicon (b) Grouped according to chemical properties The number of elements in each of the long periods in the periodic 80. Arranged in the order of increasing number of neutrons in the (c) table is atomic nucleus (a) 2 (b) 8 (d) Arranged in the order of increasing number of protons in the (c) 18 (d) 32 nucleus All the elements in a group in the periodic table have the same [NCERT 1978].MP PET 1996(MP PAMID1996) periodic table, all the non- metals are placed 67. under [EAMCET 1988] (a) Atomic number (a) s-block (b) *p*-block (b) Electronic configuration (c) *d*-block (d) *F*-block (c) Atomic weight Number of electrons in the outermost shell or number of (d) Elements with outer electronic configuration ns^2np^6 are 82. electrons for bonding [MP PET/PMT 1998] 68. The most predominantly ionic compounds will be obtained from the (a) Alkaline earth metals (b) Transition elements combination of elements belonging to (c) Chalcogenes (d) Noble gases (a) 1 and 7 groups (b) 2 and 6 groups 83. Highest density is of [RPET 2000] (d) 0 and 7 groups (c) 3 and 5 groups (a) Ir (b) Os 69. An atom with atomic number 21 belongs to the category of Pb(d) (c) Hg [Kurukshetra CEE 1991] (a) *s*-block elements (b) p -block elements Lithium shows diagonal relationship with 84. [MP PET 1995, 96; EAMCET 1990] d -block elements (d) *f*-block elements (c) (a) Al (b) *Mg* Which metal has 2 electrons in the outermost orbit 70. (d) *B* (c) Be (a) *Na* (b) *Cu* $1s^2 2s^2 2p^6 3s^2$ is the electronic configuration of the metal 85. (c) Au (d) *Be* [RPET 2000] 71. In the modern periodic table, elements are arranged in [MP PMT 1990; MP PET 1995; CPMT 1971, 73, 78, 80] Na Mg(a) (b) (a) Increasing mass (d) (c) Fe Al(b) Increasing volume 86. Element having atomic number 17 is placed in (c) Increasing atomic number [MP PET 1995] (d) Alphabetically (a) *I*-group (b) V-group 72. Alkali metals in each period have [MP PMT 1995] (c) VIII-group (d) VII-group (a) Smallest size 87. The most importasnt active step in the development of periodic (b) Lowest ionization potential table was taken by [CPMT 1976] (c) Highest ionization potential (a) Mendeleef (b) Dalton (d) Highest electronegativity (c) Avogadro (d) Cavendish The elements on the right side of the periodic table are 73. 88. Who is called the father of chemistry [CPMT 1972] [CPMT 1976] (a) Faradav (b) Priestley (a) Metals (b) Metalloids (d) Lavosier (c) Rutherford (c) Non-metals Transition elements (d) The total number of rare-earth elements is 89. [CPMT 1993] The screening effect of *d*-electons is [RPMT 2000] 74. (a) 8 (b) 32 (a) Equal to that of *p*-electrons (c) 14 (d) 10 (b) More than that of *p*-electrons Which is metalloid 90. [Bihar MEE 1997] Same as *f*-electrons (c) (a) *Pb* (b) SbLess than *p*-electrons (d)

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	(c) Bi (d) Zn	104.	To which block is related an element having electronic configuration $1a^2 2a^2 2a^6 2a^2 2a^6 2a^{10} 4a^{1}$ where a^{11} is the set of the purposed
	(e) Mg		$15 \ 25 \ 2p \ 5s \ 5p \ 5u \ 4s \ \text{in the periodic table [MP PM 1995]}$
•	The element or elements whose position is anomalous in the periodic table is		(a) s - block(b) p - block(c) d - block(d) f - block
	(a) Halogens (b) Fe, Co and Ni	105.	Ce-58 is a member of
	(c) Inert gases (d) Hydrogen		(a) s-block elements (b) p-block elements
	An element M has an atomic mass 19 and atomic number 9. Its ion		(c) <i>d</i> -block elements (d) <i>F</i> -block elements
	is represented by	106.	Atomic number of elements represent
	(a) M^+ (b) M^-		(a) Number of protons in the nucleus
	(c) M^{2+} (d) M^{2-}		(b) Number of neutrons in the nucleus
	The number of elements in the 5th period of the periodic table are		(c) Number of protons and neutrons in nucleus
	(a) 8 (b) 10		(d) The valency of an element
	(c) 18 (d) 32	107.	As we go from left to right in period two of the periodic table, gram
	The element with atomic number 55 belongs to		atomic volume of the elements
	[MP PMT 1995]		(a) Will change indefinitely
	(a) <i>s</i> -block (b) <i>p</i> -block		(b) Increases at a constant rate
	(c) <i>d</i> -block (d) <i>f</i> -block		(c) First increases then decrease
	Coloured salts are formed by [Bihar MEE 1996]		(d) Decreases
	(a) Alkali metals (b) Lanthanides	108.	The electronic configuration of the element which is just above the
	(c) Actinides (d) Transition metals		
	(e) None of these		(a) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^2$
	Which one of the following is an <i>s</i> - block element [MP PMT 1999]		(b) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^5$
	(a) Aluminium (b) Chromium		(c) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^6 4s^1$
	(c) Niobium (d) Potassium		
	In the modern periodic table, the place of the element with atomic		(d) $1s^2 2s^2 2p^0 3s^2 3p^0 3d^{10} 4s^1 4p^0$
	number 31 is in $[MP PM I I999]$	109.	The elements indicating following atomic numbers belong to same
	(a) $s - block$ (b) $a - block$		group [RPMT 1997]
	$\begin{bmatrix} c \\ p \end{bmatrix} = block \qquad \qquad$		(a) 11 and 37 (b) 19 and 15
	(a) Strong metallic		(c) 39 and 88 (d) None of these
	(b) Weak metallic	110.	Elements in which $4f$ orbitals are progressively filled are called as[MP
	(c) Strong non-metallic		(a) Transition elements (b) Lanthanides
	(d) Weak non-metallic		(c) Actinides (d) Inert gases
	Elements of d group are called [DPMT 1006]	111.	Hydrogen can be put in halogen group because
	(a) Transition elements (b) Transuranic elements		[RPMT 2000]
	(c) Metals (d) Metalloids		(a) It has deuterium and tritium as isotopes
	Which of the following is a normal element		(b) It forms hydrides like chlorides
	(a) C_{e} (b) H_{e}		(c) It contains one electron only
	(a) Ce (b) He		(d) It is light
	Which of the following is metalloid [BHU 1996; AMU 2000]	112.	In the main group elements (i) as we proceed down the same group in the periodic table and (ii) as we proceed from left to right in the
	(a) Pb (b) Zn		same period, the atomic radius
	(c) As (d) None of these		(a) (i) Increase continuously; (ii) Decreases continuously
	Under normal condition which of the following electronic		(b) (i) Decreases continuously; (ii) Increases continuously
	configuration is able to form dipositive ion [RPET 2000] (a) $[Ar]4s^1$ (b) $[Ne]2s^23p^6$		 (c) (i) Increases continuously; (ii) Decreases upto the group IV and then increases upto the end of the period.
	(c) $[Ne]3s^2$ (d) None of these		 (d) (i) Decreases continuously; (ii) Decreases upto the group IV and then increases upto the end of the period.
	The statement that is true for the long form of the periodic table is[117	Г 198 8 }.	Cause of diagonal relationship is
	(a) It reflects the sequence of filling the electrons in the order of sub-energy levels s , p , d and f	-	(a) Similar electronic configuration of the elements
	(b) It helps to predict the stable valency states of the elements		(b) Similar e/r ratio of the elements
	(c) It reflects trends in physical and chemical properties of the elements		(c) Same number of valency electrons in the elements(d) Same atomic weights of the elements
	(d) It helps to predict the relative ionicity of the bonds between any two elements	114.	From which of the following the hydration energy of Mg^{2+} is

larger

[MP PET 2000]

								Cnemica	rer	oaicity 6	SELF SCORER
(a)	Na ⁺	(b)	Al^{3+}			(b)	Number of	protons			
(c)	Be^{2+}	(d)	<i>Cr</i> ³⁺			(c)	Number of	neutrons			
Gro	up comprising of all metals is			[RPET 2000]		(d)	Number of	isotopes			
(a)		(b)	IVA			(e) D	Number of	nucleons	1.	1	
(c)	VIIA	(d)	11 <i>A</i>		127.	Bery	yillium snows	diagonal relati	onsnip (L)	With	[Pb.CET 2003]
Who Tab	ose name is not associated le	with	the development	of Periodic [DCE 1999]		(a) (c)	Nig B		(d)	Al	
(a)	Prout's	(b)	Newlands	,	128.	Whi in t	ich of the pr he periodic t	operties remai able	ns uncl	nanged on de	scending a group
(c)	Rutherford	(d)	Loother Meyer				·			[MP PM]	[1997; RPMT 2002]
Elen	nent of atomic number 23 is	place	d in the periodic ta	ble in [MP PMT	1996]	(a)	Atomic size	2	(b)	Density	
(a)	<i>s</i> - block	(b)	p – block			(c)	Valence ele	ctrons	(d)	Metallic cha	racter
(c)	d - block	(d)	f - block		129.	Whi	ich of the fol	lowing element	t does r	ot occur in li	quid form
ln v alka	vhich of the following group line earth metals family	s all	the three members	s are of the		(a)	Hg		(b)	Li	[RPMT 2002]
(a)	Al, Sr, Ti	(b)	Li, Na, K		100	(c) The	Ga		(d)	Br	
(c)	Mg, Ba, Ca	(d)	Rb, Cs, Fr		130.	(a)	Increasing	atomic radius	perties	15	
Asta	ntine is a			[RPET 2000]		(b)	Increasing	atomic weights			
(a)	Halogen			[]		(c)	Number of	electrons in th	ie valen	cy orbit	
(b)	Bare earth element					(d)	The re-occu	arrence of simi	lar oute	er electronic c	configuration
(c)	Alkaline earth metal				131.	The thou	chemistry o ugh they are	f lithium is ve placed in diffe	ry simi rent gro	lar to that of oups	magnesium even
(d)	None of these								Ū.	·	[NCERT 1982]
The	nitride ion in lithium nitride	is co	mposed of			(a)	Both are fo	und together i	n natur	e	
			[CBS	SE PMT 2001]		(b)	Both have 1	nearly the same	e size		
(a)	7P + 7e	(b)	10P + 7e	1		(c) (d)	Both have s	similar electron f their charge	iic confi	guration	2000
(c)	7P + 10e	(d)	10P + 10e			(u)		i their charge	to size i	s nearly the s	ballie

ground state

(c) Na, P, Cl

(a) $MgCO_3$

(c) Li_2CO_3

(a) H_2O

(c) CH_4

(a) Chromium

(c) Diamond

(a) Noble gases

(c) Heavy metals

(a) Number of electrons

(a) Cl^{-}, Fe^{3+}, Cr^{3+}

Which set has the same number of unpaired electrons in their

Which of the following doesn't decompose on heating

Which of the following has smallest bond angle

The metal-having highest melting point is

The elements with atomic numbers 9, 17, 35, 53, 85 are all

The atomic number of an element is derived from

(b)

(d) N, P, V

(b) Na_2CO_3

(b) NH_3 (d) CO_2

(b) Tungston (d) Silver

(b) Halogens (d) Light metals

(d) $Ca(HCO_3)_2$

[JIPMER 2000]

[AMU 2002]

[AMU 2002]

[AMU 2002]

[KCET 2004]

[Kerala PMT 2004]

 Na^+ , Mg^{2+} , Al

115.

116.

117.

118.

119.

120.

121.

122.

123.

124.

125.

126.

Atomic and Ionic radii

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1.	The	ratio between radii of He^+	ion a	nd <i>H</i> atom is	[MP PFT 1006]
	(a)	$\frac{1}{2}$	(b)	1	[111 1 1 1 1 9 9 0]
	(c)	$\frac{3}{2}$	(d)	2	
2.	The	smallest among the following	ions	is	[JIPMER 1999]
	(a)	Na ⁺	(b)	Mg^{+2}	
	(c)	Ba^{2+}	(d)	Al^{3+}	
3.	Whi	ch is smallest in size	. ,		[RPMT 1997]
	(a)	O ²⁻	(b)	C^{4-}	
	(c)	F^{-}	(d)	N^{3-}	
4.	Whi	ch of the following has larges	t size		
		[Mł	РМТ	' 1995, 2003; JIPM	ER (Med.) 2002]
	(a)	Al	(b)	Al^+	
	(c)	Al^{+2}	(d)	Al^{+3}	
5.	Of t	he following, the one with lar	gest :	size is	
				[EAMCET	1997; BHU 1999]
	(a)	Cl^-	(b)	Ar	
	(c)	K^+	(d)	Ca^{2+}	
6.	Whi	ch cation has smallest radius			[RPET 2000]
	(a)	K^+	(b)	Na ⁺	
	(c)	Li^+	(d)	Be^{2+}	
7.	The	radii of F,F^-,O and O^{-2}	are i	in the order of	

SEL	SCORER	628 Chemical Pe	riodio	city	
				[AIIMS 1999; CPMT 199	99]
	(a)	$O^{2-} > F^- > O > F$	(b)	$O^{2-} > F^- > F > O$	
	(c)	$F^- > O^{2-} > F > O$	(d)	$O^{2-} > O > F^- > F$	
8.	Whiel	h of the following has the	smalles	t size	
				[CBSE PMT 199	9 6]
	(a)	Na ⁺	(b)	Mg^{+2}	
	(c)	Cl^{-}	(d)	F^-	
9.	Whiel	h of the following is large	st	[CBSE PMT 199	96]
	(a)	Cl^-	(b)	S^{2-}	
	(c)	Na ⁺	(d)	F^-	
10.	Whiel	h of the following proper	ty displ	ays progressive increase do	wn
	a grou	up in the Bohr's periodic	table		
	(a) 1	Electronegativity	(b)	Electron affinity	
	(c)	Ionization potential	(d)	Size of the atom	1
11.	given	by	eon in a	ingstrom units are respectiv [IIT 19	ely 87]
	(a) (0.762, 1.60	(b)	1.60, 1.60	
10	(c) (0.72, 0.72 h ian has snootast nadius i	(d) in the fe	None of these values	
12.	which	n ion has greatest radius	in the it	CPMT 1976: NCERT 19	771
	(2)	H^{-}	(b)	F ⁻	
	(a)	n -	(0)	1 1-	
10	(c) Whial	<i>Br</i> h has the maximum atom	(d) in madiuu		
13.	which			s WT 1975: Alims 1982: DPMT 19	821
	(a)	Al	(b)	Si	-1
	(=) (c)	P	(d)	Ma	
14.	Whiel	, h one of the following ior	is has th	ne highest value of ionic rad	ius
		o ² -	(1)	[AIEEE 20	04]
	(a)	0-	(b)	B	
	(c)	Li^+	(d)	F^-	
15.	On go	oing down a main sub-gro	oup in t	he periodic table (example	Li
	to Ca	s in 1A or <i>Be</i> to <i>Ra</i> omic radius is a	in 11A),	the expected trend of chang	ges
				[CPMT 1981; NCERT 19	79]
	(a) (Continuous increase			
	(b) (c) 1	Continuous decrease Pariodic one on increase	followed	by a decrease	
	(d)	A decrease followed by in	crease	by a decrease	
16.	Whiel	h one of the following is t	the smal	lest in size	
			2 2	[11T 194	89]
		3		- 2-	

(a)	N^{3-}	(b)	O^{2-}
(c)	F^{-}	(d)	Na ⁺

Which one is the correct order of the size of the iodine species
[Pb. CET 1986; CBSE PMT 1997; Kurukshetra CEE 1998;
RPMT 1999; DCE 1999; MP PET 2000;
MP PMT 2001; BCECE 2005]

(a)
$$I > I^+ > I^-$$
 (b) $I > I^- > I^+$

 (c) $I^+ > I^- > I$
 (d) $I^- > I > I^+$

 Which one has larger radius
 [CPMT 1997; KCET 2005]

 (a) Na^+
 (b) F

 (c) F^-
 (d) Na

 (b) $I > I > I > I^- > I^+$

In third row of periodic table the atomic radii from Na to Cl 19. [MP PMT 1986]

- (a) Continuosly decreases
- (b) Continuosly increases
- (c) Remains constant
- (d) Increases but not continuously

The size of the following species increases in the order

[IIT-JEE 1990; AFMC 1995]

(a) $Mg^{2+} < Na^+ < F^- < Al$ (b) $F^- < Al < Na^+ > Mg^{2+}$ (c) $Al < Mg < F^- < Na^+$ (d) $Na^+ < Al < F^- < Mg^{2+}$ In K^+F^- ionic radius of F^- is more while atomic radius of K^+ 21. [CPMT 1997] is (a) Less than F^- (b) More than F(c) Equal of F^- (d) None of these 22. Which one of the following species possesses maximum size [EAMCET 1993; MP PET 2001] (a) Na^+ (b) *F*⁻ (d) O^{2-} (c) *Ne* The ionic radii of N^{3-} , O^{2-} , F^- and Na^+ follow the order[MP PET/PMT 1 23. (a) $N^{3-} > O^{2-} > F^- > Na^+$ (b) $N^{3-} > Na^+ > O^{2-} > F^-$ (c) $Na^+ > O^{2-} > N^{3-} > F^-$ (d) $O^{2-} > F^- > Na^+ > N^{3-}$ 24. On moving down a group of regular elements, both atomic and ionic radii increases with increasing [BMEE 1995] (a) Atomic number (b) Atomic weight (c) Atomic mass (d) None of these 25. Which one of the following indicates the correct order of atomic size[EAMCET (a) Be > F > C > Ne(b) Be < C < F < Ne(c) Be > C > F > Ne(d) F < Ne < Be < C26. Which has the smallest size [MP PET 1999] (b) Mg^{2+} (a) Na^+ (c) Al^{3+} (d) P^{5+} A sodium cation has a different number of electrons from 27. (a) O^{2-} (b) *F*⁻ (d) Al^{3+} (c) Li^{-} 28 Which of the following statement concerning lanthanides elements is [CBSE PMT 1994] false (a) Lanthanides are separated from one another by ion exchange method lonic radii of trivalent lanthanides steadily increases with (b) increase in the atomic number (c) All lanthanides are highly dense metals More characteristic oxidation state of lanthanide elements is (d) +3The lanthanide contraction is responsible for the fact that 29. [CBSE PMT 1997] (a) Zr and Y have about the same radius (b) Zr and Nb have similar oxidation state (c) Zr and Hf have about the same radius (d) Zr and Zn have the same oxidation state Elements of which group form anions most readily 30. [CBSE PMT 1992] (a) Oxygen family (b) Nitrogen group (c) Halogens (d) Alkali metals The unit representing atomic radii and ionic radii is 31. (a) *nm* (b) *cm* (d) *m* (c) Å 32.

The atomic radii in periodic table among elements from right to left[MP PET 19 (a) Decreases

17

18.

20.

(b) Increases		44.	Which is helpful in the for	mation of ionic bond
(c) Remain constant			(a) Only small cation	
(d) First decreases and then in Of the following the ion with th	creases		(b) Univ small anion (c) Small cation and small	Il anion both
Of the following the lon with th	[MP PET 1996]		(d) Low positive charge	arge cation and small anion
$(-)$ V^+	(b) Ca^{2+}	45.	Which of the following has	alargest ionic radius
(a) K		-10-	timen of the following had	[AFMC 1999; BHU 2003]
(c) Ti^{3+}	(d) Ti^{4+}		(a) Cs^+	(b) Ii^+
Which of the following does no property indicated	ot represent the correct order of the [CBSE PMT 1997]		(a) Cs (c) Na^+	(d) K^+
(a) $Sc^{3+} > Cr^{3+} > Fe^{3+} >$	Mn^{3+} ionic radii	46.	Point out the wrong stater	nent :
(b) $Sc < Ti < Cr < Mn$ Der	nsity		On moving horizontally f	rom left to right across a period in the
(c) $Mn^{2+} > Ni^{2+} < Co^{2+} < $	< Fe^{2+} ionic radii		(a) Metallic character dec	Treases
(d) $FeO < CaO > MnO > CaO$	CuO Basic nature		(b) Electronegativity incre	eases
The order of magnitude of ior	nic radii of ions Na^+, Mg^{2+}, Al^{3+}		(c) Gram atomic volume	first decreases and then increases
and Si^{4+} is	[MP PMT 1996]	45	(d) Size of the atoms incl	reases for normal elements
(a) $Na^+ < Mg^{2+} < Al^{3+} <$	Si ⁴⁺	47.	Which of the following sta	[MP PET 1997]
(b) $Mg^{2+} > Na^+ > Al^{3+} > $	Si^{4+}		(a) X^- ion is larger in s	ize than X atom
(c) $Al^{3+} > Na^+ > Si^{4+} > A$	Mg^{2+}		(b) X^+ ion is larger in s	ize than X atom
(d) $Na^+ > Mg^{2+} > Al^{3+} >$	Si^{4+}		(c) X^+ ion is larger in s	ize than X^- ion
	x^{3-} x^{3-} x^{2-} 1		(d) X^+ and X^- ions a	re equal in size
The order of the magnitude of F^- is	[MP PMT 1996]	48.	The atomic radius of ele would be nearly the same	ements of which of the following series [MP PET 1997]
(a) $N^{3-} > Q^{2-} > F^-$	(b) $N^{3-} < Q^{2-} < F^{-}$		(a) $Na \ K \ Rb \ Cs$	(b) $Li Be B C$
(c) $N^{3-} > O^{2-} > F^{-}$	(d) $N^{3-} < Q^{2-} > F^{-}$		(c) Fe Co Ni Cu	$\begin{array}{ccc} (c) & \underline{I} & \underline{I} & \underline{I} & \underline{I} \\ (d) & F & Cl & Br & I \end{array}$
Which statement is correct		10	The decreasing order of si	ze of isoelectronic series K^+ Ca^{2+} Cl^-
(a) For potassium, the atom bromine, the atomic radius	nic radius < ionic radius; but for	4 5•	and S^{2-} is	[Roorkee 1995]
(b) For potassium and bromin	e both, the atomic radii > ionic radii		(a) $K^+ > Ca^{2+} > S^{2-}$	> Cl ⁻
(c) For potassium and bromin	e both, the atomic radii < ionic radii		(b) $K^+ > Ca^{2+} > Cl^-$	> \$ 2-
(d) For potassium, the atom bromine, the atomic radius	nic radius > ionic radius but for		(b) $K > Cu > Cl$ (c) $Ca^{2+} > K^+ > Cl^-$	$> S^{2-}$
Which of the following ion is th	e smallest ion		(c) $Cu > K > Cl$	2 ²⁺
C	[AIIMS 2001]		(d) $S^2 > Cl > K^2 >$	$\sim Ca^{-1}$
(a) O_2^+	(b) O_2^-	50.	to form anions	s of elements have the strongest tendency [MP PET 1993]
(c) O_2	(d) O_2^{-2}		(a) <i>N, O, F</i>	(b) <i>P, S, Cl</i>
The correct order of radii is	[IIT-JEE (Screening) 2000]		(c) As, Se, Br	(d) <i>Sb, Te, T</i>
(a) $N < B \rho < B$	(b) $F^- < Q^{2-} < N^{3-}$	51.	(a) Increases with the inc	species [MP PET 1994]
$(1) N_{\pi} < L_{\pi} < K$	(b) $F = 2^{3+} < F = 2^{2+} < F = 2^{4+}$		(a) Increases with the increases with the increases	crease of nuclear charge
(c) $I \forall d < L d < K$ Which one of the following show	(d) $Fe < Fe < Fe$		(c) Is the same for all	crease of nuclear charge
which one of the following shot	[MP PET 2000]		(d) First increases and th	en decreases
(a) H_2^+	(b) <i>H</i> ⁺	52.	In which of the following	pairs the difference between the covalent
(c) H	(d) H^{-}		Tach of the two metals is i	[MP PET 1994]
Which of the following is the co	rrect order of ionic radii		(a) <i>K, Ca</i>	(b) <i>Mn</i> , <i>Fe</i>
	[BHU 2002]		(c) <i>Co</i> , <i>Ni</i>	(d) Cr , Mn
(a) $F > Li > Na > K$	(b) $F > K > Na > Li$	53.	An atom of an element ha	s electronic configuration 2, 8, 1. Which of
(c) $Na > K > F > Li$	(d) $Li > Na > K > F$		(a) The element's valence	r is 7
Smallest among these species is	[KCET 2002]		(b) The element exists as	a diatomic molecule
(a) Lithium ion	(b) Hydrogen		(c) The element is of nor	n-metallic nature
(c) Lithium	(d) Helium		(d) The element forms a	basic oxide
which of the following ionic rac	iius would be maximum	54.	Which of the following ion	s has the smallest radius
$() C^{4-}$	[MF FEI 1997]			[KCET 1992]
(a) C	(b) /V		(a) Be^{2+}	(b) Li^+
(c) O^{2-}	(d) Mg^{2+}		(c) O^{2-}	(d) F^-
			· ·	

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41.

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C							
55.	Point out the <i>wrong</i> statement :	67.	The t	rivalent ion having larges	t size in	lanthanide series i	is Di parmenen s
	In a given period of the periodic table the <i>s</i> - block element has, in general, a lower value of [MP PMT 1997]		(-)	T:	(L)	[H	РБ.РМТ 2004]
	(a) Ionisation energy (b) Electronegativity		(a)	П Нf	(d)	Zr	
	(c) Atomic radius (d) Electron affinity	68.	Whiel	h of the following alkali r	netal ior	ns has lowest ionic	: mobility in
56.	Arrange the following in increasing order of their atomic radius : $N_{a} K M_{a} Bh$		aqueo	ous solutions			[DPMT 2004]
	[AFMC 1995, 97; CPMT 1999]		(a)	Rb^+	(b)	Cs^+	
	(a) $Mg < Na < Rb < K$ (b) $Mg < Na < K < Rb$		(c)	Li ⁺	(d)	Na^+	
57.	In the isoelectronic species the ionic radii (Å) of N^{3-} , Q^{2-} and	69.	lonic	radii are	(4)	[CBSE P	MT 2003, 04]
	F^- are respectively given by [Pb. CET 1989]		(a)	Directly proportional to e	ffective	nuclear charge	
	(a) 1.36, 1.40, 1.71 (b) 1.36, 1.71, 1.40		(b)	Directly proportional to s	quare of	f effective nuclear	charge
	(c) 1.71, 1.40, 1.36 (d) 1.71, 1.36, 1.40		(c) 1	Inversely proportional to	effective	nuclear charge	
58.	Al^{3+} has a lower ionic radius than Mg^{2+} because		(d)	Inversely proportional to	square o	of effective nuclear	charge.
	(a) Mg atom has less number of neutrons than Al	70.	The c by	correct sequence of increa	ising co	valent character is [CB S	represented SE PMT 2005]
	(b) Al^{3+} has a higher nuclear charge than Mg^{2+}		(a)	$LiCl < NaCl < BeCl_2$	(b)	$BeCl_2 < NaCl$	< LiCl
	(c) Their electronegativities are different		(c)	NaCl < LiCl < BeCl	(d)	BeCl ₂ < LiCl <	< NaCl
	(d) Al has a lower ionisation potential than Mg atom	71.	Corre	ect energy value order is		[Ori	issa JEE 2004]
59.	When a neutral atom is converted into cation, there is [FAMCET 1086]		(a)	ns np nd($n-1$)f	(b)	ns np(n-1)d (n	(n-2)f
	(a) Decrease in the atomic number		(c)	ns nn(n-1)d (n-1)f	(d)	$n_s(n-1)d_n($	- 1) <i>f</i>
	(b) An increase in the atomic number	50	(C) The :	ns np(n 1)a (n 1)j	(u)		1) <u>j</u>
	(d) An increase in size	72.	are in	the order	owing ca	lori [Ori	issa JEE 2004]
60.	A trend common to both groups I and VII elements in the periodic		(a)	$Li^+ < Na^+ > K^+ < Rb^+$	+	-	
	table as atomic number increases is [NCERT 1081: FAMCET 1080]		(b)	$Li^+ > Na^+ > K^+ > Rb$	+		
	(a) Oxidising power increases		(0)	Li > Nu > K > Kb	+		
	(b) Atomic radius increases		(c)	$Li^{\circ} < Na^{\circ} > K^{\circ} > Rb$			
	(c) Maximum valency increases (d) Reactivity with water increases		(d)	$Li^+ = Na^+ < K^+ < Rb^+$	÷		
61.	Increasing order of atomic radii is [RPET 2003]		_				
	(a) $Mg^{2+} < Na^+ < Ne < F^- < O^{2-}$			Ionisatio	n ene	ergy	
	(b) $Na^+ < Mg^{++} < Ne < F^- < O^{2-}$		т ե:			1	
	(c) $O^{2-} < F^- < Ne < Na^+ < Mg^{2+}$	ι.	i ne n	ncorrect statement among	g the foi	lowing is	[IIT-IEE 1997]
	(d) $Ne < Q^{2-} < F^- < Na^+ < Me^{2+}$		(a) '	The first ionisation pot	ential o	f Al is less that	an the first
62.	Chloride ion and potassium ion are isoelectronic. Then		i	ionisation potential of M	g		
	[KCET 2002]		(b) ⁷	The second ionisation p	otential	of Mg is great	er than the
	(a) Potassium ion is relatively bigger (b) Depends on the other cation and anion		:	second ionisation potentia	al of Na	a	
	(c) Their size are same		(c) '	The first ionisation pote	ential of	f <i>Na</i> is less that	an the first
60	(d) Chloride ion is bigger than potassium ion		1	ionisation potential of <i>M</i>	g		
03.	[Pb. PMT 2002; BHU 2003]		(d)	The third ionisation poter	ntial of	<i>Mg</i> is greater th	an the third
	(a) Na^+ (b) Ni^+	2	The	ionisation potential of Al	ial of a	n alamant M ia	the energy
	(c) Cs^+ (d) Mg^{+2}	2.	requi	red to	iai ui a		[JIPMER 1997]
64.	The ionic radii of Li^+, Na^+, K^+ are in which of the following order [A	AP PMT 20	002 [^a]	Remove one mole of elect	ron fror	n one mole of gase	eous anion
	(a) $K^+ > Na^+ > Li^+$ (b) $K^+ > Na^+ < Li^+$		(b)	Remove one mole of elec of the element	tron fro	m one mole of ga	seous cation
	(c) $K^+ < Na^+ < Li^+$ (d) $Li^+ > Na^+ < K^+$		(c)	Remove one mole of ele	ctron fi	rom one mole of	monovalent
65.	Which of the following has smallest size			gaseous cation of the elen	nent	1 6	
	[JIPMER (Med.) 2002]	2	(d) The i	Remove 2 moles of electro opization energy of an ele	ons fron	n one mole of gase	ous atoms
	(a) Mg^{-1} (b) Na^{-1}	з.	(a) '	The same as the electron	affinity	of the element	
66	(c) Al^{3+} (d) Si^{4+} Which one of the following is expected to have largest size		(b) 1	Equal in magnitude but o	of oppos	ite sign to the elec	tron affinity
00.	[UPSEAT 2004]		()	of the element	,		
	(a) F^- (b) O^{-2}		(c)	The energy released whe the element	n an ele	ectron is added to	an atom of
	(c) Al^{+3} (d) N^{-3}						

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(d)	The energy required to remove the outermost electron of an atom of the element		 (c) Boron has only one electron in <i>p</i>-sub-shell (d) Atomic size of boron is less than that of beryllium
The thos	first ionisation energies of alkaline earth metals are higher than se of the alkali metals. This is because	13.	$A \rightarrow A^+ + e, \ E_1$ and $A^+ \rightarrow A^{2+} + e, \ E_2$. The energy required
(a)	[MP PET 1996] There is increase in the nuclear charge of the alkaline earth		to pull out the two electrons are $E_1 \ {\rm and} \ E_2$ respectively. The correct relationship between two energy would be
(b)	metals There is a decrease in the nuclear charge of the alkaline earth metals		(a) $E_1 < E_2$ (b) $E_1 = E_2$ (c) $E_1 > E_2$ (d) $E_1 \neq E_2$
(c) (d)	There is no change in the nuclear charge None of the above	14.	Which of the following element has maximum, first ionisation potential [AIIMS 2001]
The elen	statement that is not correct for the periodic classification of nents is [IIT-JEE 1992]		(a) <i>V</i> (b) <i>Ti</i> (c) <i>Cr</i> (d) <i>Mn</i>
(a)	The properties of elements are the periodic functions of their atomic numbers	15.	Highest energy will be absorbed to eject out the electron in the configuration [RPMT 2000]
(b)	Non-metallic elements are lesser in number than metallic elements		(a) $1s^2 2s^2 2p^1$ (b) $1s^2 2s^2 2p^3$
(c)	The first ionisation energies along a period do not vary in a regular manner with increase in atomic number	16.	(c) $1s^2 2s^2 2p^2$ (d) $1s^2 2s^2 2p^3$ In which of the following process highest energy is absorbed
(d)	For transition elements the d -sub-shells are filled with electrons monotonically with increase in atomic number		[RPET 2000] (a) $C\mu \rightarrow C\mu^+$ (b) $Br \rightarrow Br^-$
Cho	pose the correct statement		$(1) L \rightarrow L^{-} \qquad (1) L^{+} \rightarrow L^{+}$
(a)	Ionization energy and electron affinity increases across a period	17	(c) $I \rightarrow I$ (d) $Ll \rightarrow Ll$ The first indication material of $M_{\rm e}$ $M_{\rm e}$ $A_{\rm e}$ along L in the contraction of $M_{\rm e}$
(b)	lonization energy increases but electron affinity decreases along a period	17.	(a) $Na < Mg > Al < Si$ (b) $Na > Mg > Al > Si$
(c)	lonization energy decreases but electron affinity increases	18	(c) $Na < Mg < AI > SI$ (d) $Na > Mg > AI < SI$ How many ionisation energies can carbon have
(d) Both decreases along a period			(a) 1 (b) 2
ln l four	halogens, with the increase of atomic number which habit is nd	10	(c) 4 (d) 6 UA: A
(a)	Habit to loose electrons decreases	19.	[IIPMER 1007; CPMT 1007; AIMS 2000]
(b)	Ionic radii decreases		(a) P (b) Si
(c)	Ionization potential decreases		$ \begin{array}{c} (a) & M \\ (b) & S \\ (c) & M \\ (c) & M \\ (d) & A $
(d)	In MX_2 ($M =$ metal and $X =$ halogen), covalent properties	20	(c) Mg (d) Ai
	decreases	20.	(a) Large size (b) Small size
loni	zation potential is lowest for		(c) lonic bond (d) Covalent bond
	[CPMT 1989; MP PET 2001]	21	The first ionization potentials (eV) of Be and B respectively are [CBSE PM]
(a)	Halogens (b) Inert gases		(a) $820aV$ $022aV$ (b) $022aV$ $022aV$
(c)	Alkaline earth metals (d) Alkali metals		(a) $8.29eV$, $9.32eV$ (b) $9.32eV$, $9.32eV$
Whi	ich of the following explanation is best for not placing hydrogen		(c) $8.29eV$, $8.29eV$ (d) $9.32eV$, $8.29eV$
in e	ither the group of alkali metals or halogens [NCERT 1978]	22.	Which ionisation potential (IP) in the following equations involves the greatest amount of energy [Pune CET 1998]
(a)	The ionization energy of hydrogen is to high for group of alkali metals, but too low of halogen group		(a) $Na \to Na^{+} + e^{-}$ (b) $K^{+} \to K^{2+} + e^{-}$ (c) $C^{2+}_{a} \to C^{3+}_{a} + e^{-}$ (c) $C^{-+}_{a} \to C^{-2+}_{a} + e^{-}_{a}$
(b)	Hydrogen can form compounds with all other elements		(c) $U \to U^+ + e^-$ (d) $Ua \to Ua^- + e^-$
(c)	Hydrogen is much lighter element than the alkali metals or the halogens	23.	[MH CET 1999]
(d)	None of the above		$ \begin{array}{c} (a) & \mathcal{M} \\ (c) & \mathcal{A} \\ \end{array} $
The beca	ause [MP PET 1993]	24.	The first four ionization energy values of an element are 191, 578, 872 and 5962 <i>kcal</i> . The number of valence electrons in the element
(a)	Nitrogen has half filled <i>p</i> -orbitals		is
(b)	Nitrogen is left to the oxygen in the same period of the periodic table		(a) 1 (b) 2 (c) 3 (d) 4
(c)	Nitrogen contains less number of electrons	25.	Which of the following has least ionization potential
(d) The	Nitrogen is less electronegative		[CPMT 1982, 93]
its o	ground state is called [CPMT 1980. 04]		$ \begin{array}{cccc} (a) & L & (b) & C \\ (c) & C \\ \end{array} $
(a)	Potential energy (b) Ionization energy	26.	Which of the following element has the lowest ionization potential [CPMT 1976
(c)	Electrode potential (d) Activation energy		(a) <i>Fe</i> (b) <i>H</i>
The	first ionization energy of boron is less than that of beryllium		(c) Li (d) He

- 12. The first ionization energy of boron is less than that of beryllium because
 - (a) Boron has higher nuclear charge

4.

5.

6.

7.

8.

9.

10.

11.

(b) Atomic size of boron is more than that of beryllium

(a) Remains same

energy

27.

[CPMT 1976, 89; NCERT 1978; EAMCET 1985]

As one moves along a given row in the periodic table, ionization

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	(b) Increases from left to righ	t			(a)	В	(b)	Li		
	(c) First increases, then decre	ases			(c)	Ne	(d)	F		
20	(d) Decreases from left to rig	nt [ATAA	- 2001, P\/D 2002]	42.	The	set representing the con	rrect order	of first ionisati	on potential is	[IIT-JEE
20.	(a) Noble gases	[Arm	2001; BVP 2003]		(a)	K > Na > Li	(b)	Be > Mg > 0	Ca	
	(b) Platinum metals				(c)	B > C > N	(d)	Ge > Si > C		
	(c) Transition elements			43.	Amo	ong the following opt	ions, the	sequence of i	increasing first	
	(d) Inner-transition elements				ionis	sation potential will be				
2 9 .	Which one of the following	elements has the hi	ghest ionisation					[AIIMS 2000	0; MP PMT 2002]	
	energy	2	[IIT-JEE 1990]		(a)	B < C < N	(b)	B > C > N		
	(a) $[Ne]3s^2 3p^1$	(b) $[Ne]3s^2 3p$	2		(c)	C < B < N	(d)	N > C > B		
	(c) $[Ne]3s^2 3p^3$	(d) $[Ar] 3d^{10} 4$	$s^{2} 4p^{2}$	44.	The	decreasing order of t	he ionisatio	on potential ir	the following	
30.	Which of the following element	s has the lowest ionis	tion potential [EAM	CET 1993	elem	ients is			[MP PMT 2001]	
	(a) <i>N</i>	(b) <i>O</i>			' (a)	Ne > Cl > P > S > I	Al > Mg			
	(c) <i>F</i>	(d) Ne			(b)	Ne > Cl > P > S > l	Mg > Al			
31.	Which of the following has low	est first ionisation pot	ential		(c)	Ne > Cl > S > P > l	Mg > Al			
	() -	(1) -	[CPMT 1993]		(0)		A1. M			
	(a) B	(b) C			(d)	Ne > Cl > S > P > I	Al > Mg			
	(c) <i>N</i>	(d) <i>O</i>		45.	Whi	ch is the correct order	of the firs	t ionization po	tential of <i>N</i> , <i>O</i>	
32.	If first orbit energy of He^+	is - 54.4 eV, then t	he second orbit		and				[AMU 2000]	
	energy will be		[Roorkee 1995]		(a)	C > N > O	(b)	C < N > O		
	(a) $-54.4 \ eV$	(b) $-13.6 \ eV$			(c)	O > N > O	(d)	$C > N \sim O$		
	$(c) - 27.2 \ eV$	(d) + 27.2 eV		46.	Whi	ch of the following orde	er is wrong		[CBSE 2002]	
33.	The screening effect of inner el	ectrons of the nucleus	Causes		(a)	$NH_3 < PH_3 < AsH_3$	I_3 -acidic na	ature		
	(a) A decrease in the ionisation	n notential	[//// /////////////////////////////////			5 5	5			
	(b) An increase in the ionisati	on potential			(b)	$Li^+ < Na^+ < K^+ < 0$	Cs^{+} -ionic r	adius		
	(c) No effect on the ionisation	n potential			(c)	$Al_2O_3 < MgO < Na$	$u_2 O < K_2 C$) -basic		
	(d) An increase in the attracti	on of the nucleus to t	he electrons		(d)	Li < Be < B < C-t i	onisation p	otential		
34.	Which of the following has high	nest first ionization en	ergy	47	Whi	ch of the following has:	the least in	nization potent	ial	
34.	which of the following has high	lest mist ionization en	[MP PET 1994]	4/.	vviii	en of the following has		mzation potent	[MP PET 2002]	
	(a) Sulphur	(b) Oxygen	[(a)	Lithium (Li)	(b)	Helium (<i>He</i>)	[//// / 2/ 2002]	
	(c) Nitrogen	(d) Phosphorus			(a)	Nitrogen (Λ)	(d)	$\operatorname{Tinc} (Zn)$		
35.	The second ionization potential	is		48	(C) The	first ionisation energy of	(u) Sf lithium w	ill be		
		[Bihar CEE 1995	;; CET Pune 1998]	40.	The	mat lomation energy e		in be	[FAMCET 1990]	
	(a) Less than the first ionizati	on potential			(a)	Creater than B_{a}	(b)	Loss than Bo		
	(b) Equal to the first ionization	n potential			(a)		(U)		6 F	
	(c) Greater than the first ioni	zation potential			(c)	Equal to that of <i>Na</i>	(d)	Equal to that	of F	
	(d) None of these			49.	Spec	etrum of Li^{2+} is simila	r to that of	r -	[AIIMS 2002]	
36.	When the first ionization e	nergies are plotted	against atomic		(a)	Н	(b)	He		
	number the peaks are occupied		[CET Pune 1998]		(c)	Be	(d)	Ne		
	(a) Alkali metals	(b) Halogens		50.	Higł	nest ionisation energy st	ands for		[DPMT 2000]	
	(c) Rare gases	(d) Transition ele	ments		(a)	Не	(b)	С		
37.	Among the following which has	s the highest first ioniz	zation energy		(c)	Ν	(d)	Н		
	(a) <i>K</i>	(b) <i>Na</i>		51.	Whi	ch of the following ele	ctrons sho	uld have the h	ighest value of	
	(c) <i>B</i>	(d) <i>Kr</i>			ionis	sation energy (for the	same valu	ie of the prir	ncipal quantum	
38.	The first ionisation potential w	ill be maximum for			num	iber)				
			[CPMT 2000]		(a)	\$	(b)	P		
	(a) Lithium	(b) Hydrogen			(c)	d	(d)	f		
	(c) Uranium	(d) Iron		52.	The	correct sequence of	elements	in decreasing	order of first	
39.	Arrange S, P, As in order of inc	reasing ionisation ene	rgy		ionis	sation energy is			[MP PET 1997]	
		[JIP/	MER (Med.) 2002]		(a)	Na > Mg > Al	(b)	Mg > Na >	Al	
	(a) $S < P < As$	(b) $P < S < As$			(c)	Al > Mg > Na	(d)	Mg > Al > d	Na	
	(c) $As < S < P$	(d) $As < P < S$		FO	(-) Com	ect order of notarisir -		0	-	
40.	With reference to concept of	onisation potential, w	hich one of the	53.	COLL	ect order or polarising	power 1s	[110 D110	0000. BUIL	
	following sets are correct	[Kuru	kshetra CEE 1991]			_	-	[WE FWI.	2003; BHU 2003]	
	(a) $U > K > Cs$	(b) $B > U > K$			(a)	$Cs^+ < K^+ < Mg^{2+} <$	$< A l^{3+}$			
	(c) $Cs > U > B$	(d) $Cs < U < K$	-		(L)	$K^+ < C_{c}^+ < M_{c}^{2+}$	< A 1 ³⁺			
41.	Which among the following	species has the his	ghest ionisation		(D)	n < cs < Mg	$ \land \land \iota$			
	potential	·	[KCET 2001]		(c)	$Cs^+ < K^+ < Al^{3+} <$	Mg^{2+}			

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	(d) $K^+ < C$	$ds^+ < Al^{3+} < Mg^{2+}$			(a) 13.6 <i>eV</i>	(b) >13.6 <i>eV</i>
54.	Correct increa	sing order of first ioni	stion potential is		(c) $< 13.6eV$	(d) 1.5 <i>eV</i>
			[UPSEAT 2003]	68.	Which of the following eleme	ents will have the lowest first ionisation
	(a) $Na < Ma$	dg > Al < Si (b)) $Na < Mg < Al < Si$		(a) Ma	(b) Rb
	(c) $Na > M$	lg > Al > Si (d) $Na < Mg < Al > Si$		(a) Mg	(1) C_{z}
55.	The ionisation	potential of hydroger	from ground state to the first	60	(c) <i>Ll</i> In the long form of period	(a) Cu dic table the element baying lowest
00.	excited state is	6	[DCE 2001]	09.	ionisation potentials are prese	ent in [EAMCET 1992]
	(a) −13.6 e	eV (b) 13.6 <i>eV</i>		(a) l group	(b) IV group
	(c) $-34 eV$) 34 eV		(c) VII group	(d) Zero group
~6	(c) 5.4 <i>C</i> V			70.	The process requiring the abs	sorption of energy is
50.	In view of the	r low lonisation energi			(-) $E \rightarrow E^{-}$	(b) $Cl \rightarrow Cl^{-}$
	(a) Weak oxi	dising agents			(a) $\Gamma \rightarrow \Gamma$	$\begin{array}{c} (B) Cl \rightarrow Cl \\ (I) H H^{-} \end{array}$
	(b) Strong re	educing agents			(c) $O \rightarrow O^2$	$(d) H \to H$
	(c) Strong ov	kidising agents		71.	In a period from Ll to F , if	Ionization potential
	(d) Weak red	lucing agents			(a) Increases	(b) Decreases
57.	Of the followi	ing iso-electronic ions	, the one which has the lowest		(c) Remains same	(d) None of the above
	ionisation pote	ential is	[AMU 1999]	72.	lonization energy increases in	the order
	(a) <i>Na</i> ⁺	(b) Mg ⁺⁺		(a) Be, B, C, N	(b) B, Be, C, N
	(c) F^{-}	(4) 0		(c) C, N, Be, B	(d) N, C, Be, B
58.	lonisation ener	rev in group 1-A varies	in the decreasing order as [Oriss	73. a IEE 2005]	A neutral atom will have th	e lowest ionization potential when its
0	(a) $Li > Na$	$K > C_s$ (b)	Na > Li > K > Cs	- ,0]	electronic configuration is	[NCERT 1978: CBSE PMT 1991]
	(c) $Li > Cs$	> K > Na (d	$K > C_{S} > N_{a} > I_{i}$		(a) $1s^{1}$	(b) $1s^2 2s^2 n^6$
59.	Which of the	following relation is	correct with respect to first (1)			(0) 15,25 p
	and second (11) ionization potentials	of sodium and magnesium [CPMT	' 1999]	(c) $1s^2, 2s^2p^2$	(d) $1s^2, 2s^2p^2, 3s^2$
	(a) $I_{Mg} = I_{Mg}$	I _{Na} (b) $I_{Na} > I_{Mg}$	74.	Which has maximum first ion	ization potential [11T 1982; EAMCET 1997;
	(c) $II_{Mg} > I$	I_{Na} (d) $II_{Na} > II_{Mg}$		(a) <i>C</i>	(b) N
60.	The order of t	the magnitude of first	ionisation potentials of Be, B, N			(d) <i>O</i>
	and O is		[MP PMT 1996]	75.	Which one of the following	g elements has the highest ionisation
	(a) $N > O$	> Be > B (b) N > Be > O > B		$(a) = \frac{N}{2}$	(b) $M\sigma$
<i>c</i> .	(c) $Be > B$	> N > O (d	B > Be > O > N		(c) <i>C</i>	(d) F
61.	which of the	following transitions	involves maximum amount of [AllMS 1992]	76.	Order of first ionization poter	ntials of elements <i>Li, Be, B, Na</i> is[Kerala CE
	$(-) M^{-}(\alpha)$	$M(\alpha)$ (b)	$M(a) \rightarrow M^+(a)$		(a) $Li > Be > B > Na$	(b) $Be > B > Li > Na$
	(a) <i>M</i> (g)	$\rightarrow M(g)$ (b	$M(g) \rightarrow M(g)$		(c) $Na > Li > B > Be$ (e) $B > Be > Li > Na$	(d) $Be > Li > B > Na$
	(c) $M^+(g)$	$\rightarrow M^{2+}(g)$ (d	$) M^{2+}(g) \to M^{3+}(g)$	77.	The ionization energy of ni	itrogen is larger than that of oxygen
62.	Which of the f	following species has lo	owest ionization potential[KCET 19	96]	because of	[RPMT 1997; DCE 1999]
	(a) <i>O</i>	(b) O ₂		(a) Greater attraction of elec	ctrons by the nucleus
	(c) O_2^+	(d) O_2^-		(c) The half-filled <i>p</i> -orbital	ls possess extra stability
63.	Which of the f	following has minimum	ionization energy		(d) Greater penetration effect	ct
-		0	[JIPMER 1999]	78.	If the IP of Na is 5.48 eV, the	he ionisation potential of K will be [EAN
	(a) <i>Ge</i>	(b) Se		(a) Same as that of <i>Na</i>	(b) 5.68 <i>eV</i>
	(c) <i>As</i>	(d) Br		(c) 4.34 <i>eV</i>	(d) 10.88 eV
64.	First I.P. of M	g is than Al	[CPMT 1997]	79.	Mg and Li are similar in their	r properties due to
	(a) Less	(b) More		(a) Same <i>e/m</i> ratio	(b) Same electron affinity
67	(c) Equal	d (d dith high set walus of is) None of these		(c) Same group	(d) Same ionic potential
სე .	(a) Potassium	n (h) Helium	80.	The formation of the oxide	ion $O_{(g)}^{2-}$ requires first an exothermic
	(c) Hydroger	n (d) Xenon		and then an endothermic step	p as shown below
66.	Which has the	highest second ionisat	tion potential		$O_{(g)} + e^{-} = O_{(g)}^{-} \Delta H^{0} = -14$	$42 k Jmol^{-1}$
			[A11MS 1991]		$O^- + e^ O^{2-} \Lambda U^0 = 0 \Lambda$	$4 k Imol^{-1}$
	(a) Nitrogen	(b) Carbon		$U_{(g)} + e = U_{(g)} \Delta n = 844$	
	(c) Oxygen	(d) Fluorine		inis is because	[AIEEE 2004]
6-	In in-i	t budnog th	no guunod ug		$() 0^{-1} \cdot 11 1$	

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	(c) Oxygen is more electronegative		(c) $O > C > B > N$ (d) $O > B > C > N$
	(d) O^- ion has comparatively larger size than oxygen atom	4.	Which one has maximum electron affinity [Roorkee 1995]
1.	Which is correct about ionisation potential [MHCET 2003]		(a) N (b) Be
	(a) It is independent of atomic radii		(c) B (d) Cl
	(b) It increases with increase in atomic radii	5.	The electron affinity for the inert gases is
	(c) It remains constant with increase in atomic radii		(a) Zero (b) High
	(d) It decreases with increase in atomic radii		(c) Negative (d) Positive
•	Flourine is the best oxidising agent because it has	6	The electron affinities of halogens are $F = 322$ $Cl = 349$
	[CPMT 2004]	0.	$Br = 324$ $I = 295kImol^{-1}$ The higher value for Cl as
	(a) Highest electron aminity		$DI = 524$, $I = 255$ kg mot . The higher value for C_i as
	(b) Highest $E_{\rm red}^0$		(a) Weaker electron electron muching in Cl
	(c) Highest E_{oxid}^0		(a) weaker electron-electron repulsion in Ci
	(d) Lowest electron affinity		(b) Higher atomic radius of F
	Which among the following elements have lowest value of IF	F 000 41	(c) Smaller electronegativity of <i>I</i>
•	which among the following elements have lowest value of IE_1 [CPM]	i 2004j _	(d) More vacant P - subshell in Cl
	(a) Pb (b) Sn	7.	which one of the following is an incorrect statement
	(c) SI (d) C In a given shall the order of correction $-\frac{G}{G}$ it is		(a) The ionisation potential of nitrogen is greater than that of
•	III a given snell, the order of screening effect is		oxygen
	[Nervaler f = (h) f > d > n > c		$(b) \;\;$ The electron affinity of fluorine is greater than that of chlorine
	(a) $s > p > a > j$ (b) $j > a > p > s$		(c) The ionisation potential of beryllium is greater than that of
	(c) $p < d < s < f$ (d) $d > f < s > p$		boron (\mathbf{d}) The electrometricity of $\mathbf{q}_{1,1}$ is a set of $\mathbf{q}_{1,1}$ if $\mathbf{q}_{1,1}$ is the set of \mathbf{q}_{1,1} is the set of $\mathbf{q}_{1,1}$ is the set of \mathbf{q}_{1,1} is the set of $\mathbf{q}_{1,1}$ is the set of \mathbf{q}_{1,1} is the set of \mathbf{q}_{1,
	(e) $f > p > s > d$	8	(a) I ne electronegativity of fluorine is greater than that of chlorine
	Which of the following has the highest first ionisation energy	0.	(a) Energy absorbed when an electron is added to an isolated atom
	[BHU 2004]		in the gaseous state
			(b) Energy released when an electron is added to an isolated atom in the gaseous state
	Which one of the following sets of ions represents the collection of isoelectronic species [AIEEE 2004]		(c) Energy required to take out an electron from an isolated gaseous atom
	(a) $K^+ C l^- M q^{2+} S c^{3+}$ (b) $N q^+ C q^{2+} S c^{3+} F^-$		(d) Power of an atom to attract an electron to itself
	(c) $K^+ Ca^{2+} Sc^{3+} Cl^-$ (d) $Na^+ Ma^{2+} Al^{3+} Cl$	9.	The electron affinity values for the halogens show the following trend [Kerala PET 2002]
,	The correct order of reactivity of halogens is		(a) $E < Cl > Br > I$ (b) $E < Cl < Br < I$
•	[MHCET 2003]		(a) $I < C_l > D_l > I$ (b) $I < C_l > D_l < I$
	(a) $F > Cl > Br > I$ (b) $F < Cl > Br < I$	10	(c) $F > Cl > Dl > 1$ (d) $F < Cl > Dl < 1$
	(a) $F < Cl < Br < I$ (b) $F < Cl < Br > I$	10.	(a) N_2 (b) S
2	(c) $r < Cl < Dl < l$ (u) $r < Cl < Dl > l$ The first ionisation notential is maximum for [CDAT 200.4]		
•	(a) B (b) N		
	(c) O (d) Be	11.	Which of the following has the least electron affinity in $kJmol^{-1}$ [AFMC
	The correct order of ionisation energy for comparing carbon.		(a) Oxygen (b) Carbon
	nitrogen and oxygen atoms is [UPSEAT 2004]	19	(c) Nullogen (u) Boron Fluorine has low electron affinity than chlorine because of
	(a) $C > N > O$ (b) $C > N < O$	14.	רמטרוויב וומז וטא בובנרטו מחווונץ נומו כחוטרוויב שבכמנצב טו [CPMT וססק]
	(c) $C < N > O$ (d) $C < N < O$		(a) Smaller radius of fluorine. high density
			(b) Smaller radius of chlorine, high density
•	Electron affinity		(c) Bigger radius of fluorine, less density
	Liouton annity		(d) Smaller radius of chlorine, less density
	Electron affinity depends on [MP PMT 2002]	13.	For electron affinity of halogens which of the following is correct [AIIMS :
	(a) Atomic size		(a) $Br > F$ (b) $F > Cl$
	(b) Nuclear charge		(c) $Br < Cl$ (d) $F > I$
	(c) Atomic number	14.	lonic compounds are formed most easily with
	(d) Atomic size and nuclear charge both		[DPMT 2005]
	Increasing order of electron affinity is [RPET 2003]		(a) Low electron affinity, high ionisation energy
	(a) $N < O < Cl < Al$ (b) $O < N < Al < Cl$		(b) High electron affinity, low ionisation energy
	(c) $Al < N < O < Cl$ (d) $Cl < N < O < Al$		(d) High electron affinity, high ionisation energy
	The correct order of electron affinity of B, C, N, O is	15.	In comparison with alkali metals, the electron affinity of halogens is
	[MP PET 1997;] & K 2005]		(a) Very high (b) Very low
	(a) $O > C > N > B$ (b) $B > N > C > O$		

16	(c) Nearly same (d) Exactly same		
10.	(a) Carbon is greater than assume		Electronegativity
	(a) Carbon is greater than oxygen		
	(b) Suprior is rest than oxygen	1	Patwaan HE HCl HBr and HI HE has the highest ionic
	(d) Broming is less than chloring	Ι.	abamatan basayaa
17	(d) bromme is less than chorne The amount of energy which is released due to addition of extra		(a) These the highest electron efficiency
17.	electron to the outermost orbit of gaseous atom is called [BHU 1996]		(a) F has the highest electron aminty
	(a) Electron capacity (b) Electron affinity		(b) In HF , electronegativity difference is highest
	(c) Ionisation potential (d) Electronegativity		(c) F^- ion has the highest value of ionic radius
18.	Which of the following species has the highest electron affinity[KCET 1996	5]	(d) Atomic orbitals of <i>H</i> and <i>F</i> have almost similar energy
	(a) <i>F</i> (b) <i>O</i>	2.	On going from right to left in a period in the periodic table the
	(c) Q^- (d) Na^+		electronegativity of the elements
	(t) (t)		[MP PET/PMT 1998; MP PMT 2002]
19.	The electron affinity values (in $KJ mol^{-1}$) of three halogens X, Y		(a) Increases
	and Z are respectively – 349, – 333 and – 325. Then X, Y and		(a) Remain unchanged
	Z are respectively [EAMCET 2003]		(d) Degraasses first then increases
	(a) F_2, Cl_2 and Br_2 (b) Cl_2, F_2 and Br_2	2	On Pauling scale which of the following does not have
	(c) Cl_2, Br_2 and F_2 (d) Br_2, Cl_2 and F_2	J.	electronegativity \geq 3.0 [MP PET 1994]
20.	Nitrogen has lower electron affinity than its preceeding element		(a) Oxygen (b) Nitrogen
	carbon because		(c) Chlorine (d) Bromine
	(a) Electron affinity decreases along a period	4.	Which one of the following represents the electronic configuration
	(b) Electron affinity generally increases along a period		[AllMS 1082: CPMT 1004: MP PMT 2000]
	(c) Nitrogen atom has half filled <i>p</i> -orbital		
21	(d) Nitrogen is a <i>p</i> -block element		(a) $[He] 2S^2$ (b) $[Xe] 0S^2$
21.	(a) Nitrogen (b) Carbon		(c) $[He]2s^2$ (d) $[Xe]6s^2$
	(c) Oxygen (d) Sulphur	5.	An atom with high electronegativity has
22.	Which one of the elements has the maximum electron affinity	0.	[Kerala (Med.) 2003]
	[CPMT 1986; AFMC 1992, 95; Bihar MEE 1996; BHU 1997;		(a) Large size
	CBSE PMT 1996, 99; MP PET 1995, 2001; AMU 2000]		(b) High ionisation potential
	(a) <i>F</i> (b) <i>Cl</i>		(c) Low electron affinity
	(c) <i>Br</i> (d) <i>I</i>		(d) Low ionisation potential
23.	Which among the following factors is the most important in making	6.	Two elements whose electronegativities are 1.2 and 3.0 the bond
	fluorine the strongest oxidizing halogen		formed between them would be [MP PET 2002]
	[AIEE 2004]		(a) Ionic (b) Covalent
	(a) Hydration enthalpy (b) Jonization enthalpy	_	(c) Coordinate (d) Metallic
	(c) Electron efficiency	7.	the solubilities of carbonates decreases down the magnesium group due to a decrease in
	(d) Bond disconition operation		(a) Lattice energies of solids
24	Which of the following pairs show reverse properties on moving		(b) Hydration energies of cations
24.	along a period from left to right and from top to down in a group [DCE :	2003]	(c) Inter-jonic attraction
	(a) Nuclear charge and electron affinity		(d) Entropy of solution formation
	(b) Ionisation energy and electron affinity	8.	Which element has the highest electronegativity
	(c) Atomic radius and electron affinity		or
	(d) None of these		Which of the following is the most electronegative
25	Which of the following properties show gradual decrease with	[CF	PMT 1981; Roorkee 1995; MP PMT 2003; EAMCET 1980; CPMT 1989; MNR 1994
4 J.	increase in atomic number across a period in the periodic table[Pb. CET 2	003]	MP PMT 1999]
	(a) Electron affinity (b) Ionization potential	•	(a) F (b) He
	(c) Electronegativity (d) Size of atom	•	(c) Ne (d) Na
26	Order of electron affinity of $E C Br$ and L is	9.	[MD PFT/DMT 1008]
20.	Order of electron annity of T, Ci, BT and Tis		(a) C (b) Mg
	[AFMC 1999; Orissa JEE 2004,05]		$ \begin{array}{c} (c) & O \\ (c) & O \\ (d) & S \end{array} $
	(a) $F < Cl > Br > I$ (b) $F > Cl > Br > I$	10.	Keeping in view the periodic law and the periodic table suggest
	(c) $F < Cl < Br < I$ (d) $F > Cl < Br > I$		which of the following elements should have the maximum
27.	Which one of the following arrangements represents the correct		electronegative character [MNR 1985]
	order of electron gain enthalpy (with negative sign) of the given		(a) P (b) As
	atomic species. [CBSE PMT 2005]	11	(c) BI (d) SD The outermost electronic configuration of the most of the second states C
	(a) $Cl < F < S < O$ (b) $O < S < F < Cl$	п.	element is
	(c) $S < O < Cl < F$ (d) $F < Cl < O < S$		[MP PET 1996: RPMT 1997: MP PET 2004]

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	(a)	$ns^2 np^3$	(b)	ns^2np^4			(c)	Fe		(d)	Cl	
	(-)	2	(1)			26.	The	attraction that an	atom ex	erts o	n a pair of e	lectrons that are
	(c)	ns np	(d)	ns np			bein	ig shared between t	that atom	m and	another ator	m to which it is
2.	Goin	ng from fluorine to chl	orine,	bromine and iodine	, the		DOI	ded by a covalent bo		lerred		Maninal MFF 1005]
	elect	ronegativity			2000]		(a)	Electron affinity		(b)	Flectronegat	ivity
	(a) (1)	Increases					(a)	lopication energy		(J)	Valence	ivity
	(D)					05	(C) The	-1		-11:-		:
	(c)	First decreases then increas	es			27.	orde	electronegativity c	or the re	ollowit	ig elements	Increases in the
	(a)	Changes randomly	1				nda)n	NG ALSÓN BUNG C		(b)	NSICP	[111907]
	Of th	he following elements, which	one	has highest electro-negati		1988; C	BSE/P	M4;1991;98HU 1996;		(U) (L)	N, 3I, C, F	
	()	,	Kuru (1)	Resnetra CET 2002; PD. PMT	2004]	-0	(c)	<i>SI, P, C, N</i>		(a)	P, SI, N, C	
	(a)		(D) (L)	БГ		28.	Cho	ose the correct state	ement			
	(\mathbf{c})		(a)	<i>F</i>			(a)	Electronegativity in	icreases (down a	a group	
	whie	ch of the following is most e	lectro	negative [CPM]	1999]		(b)	Electronegativity d	ecreases	down	a group	
	(a)	Carbon	(b)	Silicon			(c)	Electronegativity d	ecreases	from l	eft to right al	ong a period
	(c)	Lead	(d)	Tîn			(d)	Electronegativity c	hanges a	olong a	a group but	remains constant
	The	property of attracting ele	ctron	s by the halogen atom	in a			along a period				
	mole				1996]	29.	ln (C, N, O and F the	e electror	negativ	ity	[DPMT 2001]
	(a)	lonisation potential	(b)	Electron affinity			(\mathbf{a})	Decreases from ear	rhan ta f	luorin		
	(c)	Electronegativity	(d)	Electronic attraction			(d) (L)	Decreases from cal			2	
	In th	nird row of periodic table fro	m N	a to Cl			(D)	increases from car		uorine	1.1 1	
				[MP PET	⁻ 1986]		(c)	Increases from carl	bon to o	xygen	and then deci	eases
	(a)	Electronegativity increases					(d)	Decreases from car	rbon to c	oxygen	and then inc	reases
	(b)	Electronegativity decreases				30.	Whi	ch is the correct or	der of ele	ectrone	gativities	
	(c)	Ionization energy decreases										[EAMCET 1990]
	(d)	Atomic volume increases					(a)	F > N < O > C		(b)	F > N > O >	С
	W/hi	ch of the following is the mo	st ele	ctropositive element			(c)	F < N < O < C		(d)	F > N > O <	С
	***	ch of the following is the me			8 1008	31.	ln tl	he following, the ele	ment wit	h the	highest electr	opositivity is[MP PE
	(a)	Aluminium	(b)	Magnesium	[0661		(a)	Copper		(b)	Caesium	
	(a)	Phosphorus	(d)	Sulphur			(c)	Barium		(d)	Chromium	
	Whie	ch of the following sets of	of ato	oms is arranged in ord	ler of	32.	Whi	ch one of the follow	ving has t	the hig	hest electron	egativity
	(a)	S Si P	(b)	SPSi			(a)	Br		(b)	Cl	[0.027.0004]
	(\mathbf{c})	Si P S	(d)	Si S P			(\mathbf{c})	P		(d)	Si	
	(C) W/bi	ab of the following property	(u) v diar	Java prograssiva ingraas	with	22	(C) W/b:	' ah an thasa hava na		(u)	51	
	the r	rise in atomic number across	s a pe	riod in the periodic table	, with	33.	(-)	Tlastnama anaticita	ume	(L)	Electron offi	[//F/MC 2004]
	(a)	Electronegativity	(b)	Electron affinity			(b)			(0)		1
	(-)	lonization potential	(d)	Size of the atom			(c)	Ionisation energy		(a)	Excitation po	
	With	respect to chloring hydrog	en wil	l be		34.	The	polarising ability of	which o	ne of t	the following	is highest
	vv ici	respect to enforme, hydrog		NCFRT 1078- MP PMT	2002]							[DCE 2003]
	(a)	Electropositive	(h)	Electronegative	2003]		(a)	Small highly +ve io	n	(b)	Large +ve io	n
	(\mathbf{c})	Neutral	(d)	None of the above			(c)	Small highly -ve io	on	(d)	Large –ve io	n
	The	correct order of electroposit	ive na	ture of <i>Li</i> Na and Kie		35.	Amo	ong Al_2O_3 , SiO_2 ,	P_2O_3	and S	O_2 the corre	ect order of acid
			(1)				stre	noth is	2 5		2	[AIEEE 2004]
	(a)	LI > Na > K	(D)	LI > K > Na			()		. 50			[,
	(c)	Na > K > Li	(d)	K > Na > Li			(a)	$Al_2O_3 < SlO_2 <$	$< 50_{2} <$	$\langle P_2 O$	3	
•	Elect	tronegativity is a measure of	the c	apacity of an atom to			(b)	$SiO_2 < SO_2 < I$	$Al_2O_3 <$	$< P_2 O$	3	
		_		[CPMT	` 1989]		()		50 ·	110	-	
	(a)	Attract electrons	(b)	Attract protons			(c)	$SU_2 < P_2U_3 < P_2$	$SiO_2 <$	Al_2O	3	
	(c)	Repel electrons	(d)	Repel protons			(d)	$Al_2O_3 < SiO_2 < $	$< P_2 O_3$	< SO	2	
	With	n increasing atomic number	in a c	ertain period								
				[MP PM]	「 198 7]			Valency a	and ov	cidat	ion state	
	(a)	The chemical reactivity deci	reases				-	i alonoy d				
	(b)	The chemical reactivity incr	eases									
	(c)	The electropositive characte	er incr	reases		1.	Whi	ch one of the follow	ing oxide	es is n	eutral	
	(d)	The electronegative charact	er inc	reases								[IIT-JEE 1996]
	W/hi	ch of the following have may	imum	electronegativity			(a)	СО		(b)	SnO ₂	
				сси опедиализ [Срмп	1082]						<u>_</u>	
	(a)	<i>A1</i>	(b)	ردیستا ج	1902]		(c)	ZnO		(d)	SiO_2	
	(d) (-)	/u C:	(0)	Л		2.	All e	element in 3rd perio	d have			[]IPMER 1997]
	(c)		(d)	r			(a)	An atomic number	• 3			
	Whie	ch element has the lowest el	ectror	egativity			(b)	2 complete sub sh	مالو			
	\sim			[CPM1	1976]		(-)	Valance -1- ·	-na hali			
	(a)	Lı	(b)	F			(c)	valence electrons s	snell			

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	(d) 3 electrons less than the octet	16.	In the ground state of coba	lt atom (Z = 27) there	e are unpaired
3.	Which shows variable valency [RPMT 199	97]	electrons and thus the atom	is	
	(a) s - block elements (b) p - block elements		(a) 2, diamagnetic	(b) 2, paramag	gnetic
	(c) <i>d</i> - block elements (d) Radioactive elements		(c) 3, diamagnetic	(d) 3, paramag	gnetic
4.	Most reducing agent is [UPSEAT 199	99] ^{17.}	Variable valency in general, i	s exhibited by	
	(a) K (b) Mg	-	(a) Transition elements	(h) Casague al	81, 82; MP PET 2001]
	(c) Al (d) Ba		(a) Non metals	(d) Gaseous ei	ements
5.	Acidity of pentoxides in VA group	82] 19	(c) Non-metals	(u) s-block e	as the electronic
J.	(a) Decreases (b) Increases	···] 10.	configuration. Which one of	the following statem	ents regarding this
	(a) Decreases (b) increases		element is not correct	the following statem	ente regarang tine
	(c) Remains same (d) None	5	(a) It belongs to II group o	of the periodic table	
6.	If the valency shell electronic structure for an element is <i>ns²np</i>	,	(b) It has 20 neutrons		
	this element will belong to the group of	-	(c) The formula of its oxide	e is MO2	
		92]	(d) It halongs to 4th pario	d of the periodic table	
	(a) Alkan metals (b) mert metals	10	Which of the following oxide	r or the periodic table	
7	The order in which the following oxides are arranged according	to to	which of the following oxide	is is most basic	[MP PET 1004]
7.	decreasing basic nature is	35]	(a) Na O	(b) $A \downarrow O$	[//////////////////////////////////////
	(a) $Na = 0 Ma O Al = 0$. CuO	-0]	(a) Na_2O	(b) Ai_2O_3	
	(a) $Ma_20, Mg0, M_20_3, cuo$		(c) SiO_2	(d) SO_2	
	(b) MgO, Al_2O_3, CuO, Na_2O	20.	In the periodic table, the me	tallic character of elen	nents
	(c) Al_2O_3, MgO, CuO, Na_2O				[MP PET 1993]
	(d) CuO Na O MaO Al O		(a) Decreases from left to	right across a period	and on descending
~	$(\mathbf{u}) \mathcal{C}(\mathbf{u}), \mathcal{M}_2(\mathbf{v}), \mathcal{M}_2($	_	a group		
8.	Strongest reducing agent is [RPMT 199	97]	(b) Decreases from left to	right across a period	d and increases on
	(a) Cl_2 (b) Cl^-		descending a group		
	(c) Br^- (d) I^-		(c) Increases from left to r	ight across a period ai	nd on descending a
0	Metallic nature and basic nature of the oxides as we move alo	ng	(d) Increases from left to	night assage a pariod	and domograp on
<i>.</i>	a period		descending a group	right across a period	and decreases on
	(a) Increases	21.	The halogen that most easily	reduced is	[MP PMT 2000]
	(b) Decreases		(a) E	(b) Cl	[]
	(c) First increases then decreases		(d) Γ_2	(b) Cl_2	
	(d) Remains constant		(c) Br_2	(d) I_2	
10.	The correct order of increasing order of oxidising power is	22.	Which of the following is the	he correct order of g	radually decreasing
	[DCE 200	00]	basic nature of the oxides		[MP PMT 1997]
	(a) $F_2 < Cl_2 < Br_2 < I_2$ (b) $F_2 < Br_2 < Cl_2 < I_2$		(a) Al_2O_3 , MgO , Cl_2O_3	O_7 , SO ₃	
	(a) $Cl < Br < F < I$ (d) $I < Br < Cl < F$		(b) $M_{q}O$ Al O S O	CLO	
	(c) $C_{l_2} < D_{l_2} < T_2 < T_2$ (d) $T_2 < D_{l_2} < C_{l_2} < T_2$		(0) $mg0$, m_20_3 , 50_3	, <i>ci</i> ₂ <i>o</i> ₇	
11.	The most basic among these hydroxides, is [MP PMT 200	03]	(c) Cl_2O_7 , SO_3 , Al_2O_7	1 ₃ , MgO	
	(a) $Be(OH)_2$ (b) $Mg(OH)_2$		(d) SO_2 , Cl_2O_7 , MgO	$O_1 Al_2O_2$	
	(c) $Ca(OH)_2$ (d) $Ba(OH)_2$	23	The correct order of reactivi	ty of halogen is	[BH11 2000]
12	In any period the valency of an element with respect to ovvgen [Ke	20. mala (Med.) 20	(2^{2}) Elourine > bromine > cl	hlorine > jodine	
	(a) Increases one by one from 14 to VIIA	.raia (Mca.) 20	(b) Flourine > chlorine > br	romine > iodine	
	(b) Decreases one by one form 1/4 to VII/4		(c) lodine $>$ bromine $>$ chlo	orine > flourine	
	(c) Increases one by one from 1 <i>A</i> to IV <i>A</i> and then decreases from	om	(d) Bromine $>$ chlorine $>$ fl	ourine > iodine	
	VA to VIIA one by one	24	Flements A and B with th	pair respective electro	nic configurations
	(d) Decreases one by one from 1A to IVA and then increases fro	24. om			
	VA to VIIA one by one		$3d^{**} 4s^{*}$ and $4d^{**} 5s^{*}$	in their outermost she	ell are
13.	Which will show maximum non-metallic character		(a) Both non-metals		
	UPSEAT 200	93]	(b) Both coinage metals		
	(a) B (b) Be		(c) A is a non-metal and B	is coinage metal	
	(c) Mg (d) AI		(d) A is a coinage metal an	d B is non-metal	
14.	Which of the following halogen acids is least acidic	25.	Which is the best reducing a	igent	[MP PET 2000]
	[RPET 200	03]	(a) F^-	(b) Cl^{-}	-
	(a) <i>HI</i> (b) <i>HCI</i>		(d) 1	(\mathbf{b}) $\mathbf{c}i$	
	(c) <i>HF</i> (d) <i>HBr</i>		(c) Br^{-}	(d) <i>I</i> ⁻	
15.	Pentavalency in phosphorus is more stable when compared to th	^{nat} 26.	Which of the following grou	p of elements eliminat	es electron easily
	(a) Reactivity of phoephoryce	1 2002]	(a) <i>N, P, As</i>	(b) <i>O, S, Se</i>	
	(a) heatting of pitragen		(c) <i>Li, Na, K</i>	(d) <i>Cl, Ba, 1</i>	
	(b) mert nature of mirogen (a) Dissimilar electronic configuration	27.	The maximum valency of an	element with atomic	number 7 is [AFMC 2
	(d) Larger size of phosphorus atom		(a) 2	(b) 5	
	(a) carger size or phosphorus atom		(c) 4	(d) 3	

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638 Chemical Periodicity 28. Which of the following metals exhibits more than one oxidation (a) *Na* (b) *Mg* (c) Fe (d) *Al* Out of the following elements which one do you expect to be 29. reactive chemically [CPMT (a) *Mg* (b) *Ca* (c) Sr(d) *Ba* Thalium shows different oxidation states because 30. [AIIMS (a) It is a transition element (b) Of inert pair effect (c) Of its amphoteric character (d) Of its higher reactivity Oxidising action increases in halogen in the following order 31. [DPMT (b) Cl < l < Br < F(a) Cl < Br < l < F(c) l < F < Cl < Br(d) l < Br < Cl < F32. Fluorine, chlorine, bromine and iodine are placed in the same g (17) of the periodic table, because [KCET (Med.) (a) They are non-metals (b) They are electronegative (c) Their atoms are generally univalent (d) They have 7 electrons in the outermost shell of their atom Which of the following sequence correctly represents the decrea 33. acid nature of oxides [AMU 2 (a) $Li_2O > BeO > B_2O_3 > CO_2 > N_2O_3$ (b) $N_2O_3 > CO_2 > B_2O_3 > BeO > Li_2O_3$

(c) $CO_2 > N_2O_3 > B_2O_3 > BeO > Li_2O_3$

(d)
$$B_2O_3 > CO_2 > N_2O_3 > Li_2O > BeO$$

Which of the following aqueous acid is most acidic 34

(a)	HCl	(b)	HF
(c)	HI	(d)	HBr

The correct order of the increasing ionic character is 35.

(a)
$$BeCl_2 < MgCl_2 < CaCl_2 < BaCl_2$$

(b)
$$BeCl_2 < MgCl_2 < BaCl_2 > CaCl_2$$

- (c) $BeCl_2 < BaCl_2 < MgCl_2 < CaCl_2$
- (d) $BaCl_2 < CaCl_2 < MgCl_2 < BeCl_2$

36. Which of the following elements is found in native state

(a)	Al	(b)	Au
(c)	Cu	(d)	Na

- The basis of keeping the elements in the group of a periodic tab 37. [RPET 1999]
 - (a) Ionisation potential
 - (b) Electronegativity
 - (c) Electron affinity
 - (d) Number of electrons in the valence shell
- Which of the following electronic configurations in the outermost 38. shell is characteristic of alkali metals

[Bihar CEE 1992]

(a)
$$(n-1)s^2p^6, ns^2p^1$$
 (b) $(n-1)s^2p^6d^{10}, ns^1$

oxidation state[MP I	PET 1999	(c)	$(n-1)s^2p^6, ns^1$	(d)	$ns^2p^6d^1$
	39.	On	moving down the group grad	ally	increase
		(a)	Oxidising property	(b)	Electronegativity
ct to be most		(c)	Acidic property	(d)	Metallic property
[CPMT 1983]	40.	An	ion which has 18 electrons in t	the o	utermost shell is
		(a)	K^+	(b)	Ca^{2+}
		(-)		(-)	с. +
		(c)		(d)	<i>Cu</i>
[AIIMS 1982]	41.	Inci	reasing order of acid strength	or na	logen acid is
		(a)	HE < HCl < HBr < HI		
		(a) (L)	$\frac{UC}{L} < \frac{UD}{L} < \frac{UD}{L} < \frac{UD}{L} $		
		(D)			
		(c)	HF < HI < HBr < HCl		
rder	40	(a)	None of these		
[DPM1 1990]	42.	(a)		(b)	[KCET 1993]
		(a)		(\mathbf{U})	
e same group		(c)	$Ca(OH)_2$	(d)	$Zn(OH)_2$
le same group	43.	Wh	ich of the following eleme	nts s	shows maximum number of
ET (Med.) 1999]		атт	erent oxidation states in its co	mpot	CRSE PMT 1008
		(a)	Fu	(b)	
		(a)		(D)	Lu
		(c) T1	Ga	(d)	
eir atom	44.	()	e valency shell of calcium conta	ins (L)	[JIPMER 2000]
the decreasing		(a)	8 electrons	(D) (d)	o electrons
[AMU 2000]	45	(c) 2 1	4 electrons are present in	(u) a the	2 electrons orbit of A and B
	40.	res	pectively. The chemical formula	a of i	ts compound will be
		(a)	$A_2 B_2$	(b)	A_2B_3
		~ ~	5 Z	(1)	2 J
		(c)	$A_2 B$	(d)	AB
	46.	Wh	ich of the following halogens	doe	sn't exhibit positive oxidation
		(a)	Cl	(b)	Br
[AMU 2000]		(\mathbf{c})	1	(d)	F
	47	The	most basic element is	(4)	[MP PET 2000- IIPMER 2000]
	47.	(a)	Fluorine	(b)	lodine
[MP PET 2000]		(c)	Chlorine	(d)	Bromine
	48.	Wh	ich of the following set has	the	strongest tendency to form
		anio	ons		[AFMC 1999]
		(a)	Ga, In and Te	(b)	Na, Mg and Al
		(c)	N, O and F	(d)	V, Cr and Mn
	49.	An	element X which occurs in t	he fi	rst short period has an outer
e		elec	tronic structure $s^2 p^1$. When reacter of its oxides	at ar	e the formula and acid-base
[RPET 1999]			NO 1 :	(1)	
		(a)	XO_3 , basic	(b)	X_2O_3 , basic
eriodic table is		(c)	X_2O_3 , amphoteric	(d)	XO_2 , acidic
	50.	Wh in t	ich of the following gas does the outer shell	not h	ave an octet or eight electrons [CBSE PMT 2001]
		(a)	Ne	(b)	Ar
		(c)	Rn	(d)	Не
	51.	Ber	yllium and aluminium exhibit	many	properties which are similar.

- But, the two elements differ in [AIEEE 2004]
 - (a) Forming covalent halides
 - Forming polymeric hydrides (b)
 - Exhibiting maximum covalency in compounds (c)
 - (d) Exhibiting amphoteric nature in their oxides

		Dbje	ective	Questions
Which property carbon (a) Ato (b) lor	of the following stateme y of elements with an i family (group 14) omic size decrease nization energy increase	nt is ncrea	correct se in ato	with respect to the mic number in the [BHU 2004]
(c) Me	etallic character decrease			
(d) Sta	bility of +2 oxidation stat	e incr	ease	
The pair	r of amphoteric hydroxide	s is		[AIIMS 2005]
(a) A	l(OH) ₃ , LiOH			
(b) <i>B</i>	$e(OH)_2, Mg(OH)_2$			
(c) <i>B</i>	$(OH)_3, Be(OH)_2$			
(d) <i>B</i>	$e(OH)_2$, $Zn(OH)_2$			
Which o	of the following oxides is a	mph	oteric in c	haracter
				[AIEEE 2005]
(a) Ca	0	(b)	CO	
(c) <i>Sit</i>	9 ,	(d)	SnO ₂	
Which I	has highest melting point			[RPMT 1997]
(a) Li	iCl	(b)	$BeCl_2$	
(c) <i>B</i>	Cl_3	(d)	CCl_4	
Arrange	S, O and Se in ascene	ding o	order of el	ectron affinity
				[Roorkee 1990]
(a) <i>Se</i>	< <i>S</i> < <i>O</i>	(b)	Se < 0 <	S
(c) <i>S</i> <	< 0 < Se	(d)	<i>S</i> < <i>Se</i> <	0
Which ionisatic	of the following is not on energy	the	correct	increasing order of [RPMT 2000]
(a) C	$l^- < Ar < K^+$	(b)	Au < A	g < Cu
(c) C	Cs < Rb < K	(d)	K < Ca	< Sc
In whic to the p	h of the following arrange roperty indicated against	ement it	s the ord	er is NOT according [AIEEE 2005]
(a) A	$l^{3+} < Mg^{2+} < Na^+ < F^-$: In	creasing io	onic size
(b) <i>B</i>	< C < N < O : Increasing	ng fir	st ionizati	on enthalpy
(c) <i>I</i> - ne	< Br < F < Cl : Increaegative sign)	sing	electron g	gain enthalpy (with
(d) <i>Li</i>	k < Na < K < Rb : Incre	asing	metallic r	adius
Which e	element has the greatest to	enden	cy to loos	e electrons
() -				[NCERT 1980]
(a) <i>F</i>		(b)	5 P-	
(c) Fe	st acid is	(a)	Бе	[PDMT 1007]
		(L)	MaO	[117/0111997]
iai A	10120	(D)	MYYO	

Which one of the following arrangements represents the correct 10. order of electron gain enthalpy (with negative sign) of the given [CBSE PMT 2005] atomic species

(a)	Cl < F < S < O	(b)	O < S < F < Cl
(\mathbf{c})	S < O < Cl < F	(d)	F < Cl < O < S

(c)
$$S < O < Cl < F$$
 (d) $F < Cl < O < S$

Increasing order of electronegativity is [RPET 2003] (a) Bi < P < S < Cl(b) P < Bi < S < Cl(c) S < Bi < P < Cl(d) Cl < S < Bi < PWhat will be the order of 1 ionisation energy [BHU 2005] (a) Li > Na > K(b) K > Li > Na(d) Li > K > Na(c) Na > Li > KWhich of the following configurations represents atoms of the elements having the highest second ionization energy [Pb. PMT 1998] (a) $1s^2 2s^2 2p^4$ (b) $1s^2 2s^2 2p^6$ (c) $1s^2 2s^2 2p^6 3s^1$ (d) $1s^2 2s^2 2p^6 3s^2$ The first ionization potentials in electron volts of nitrogen and oxygen atoms are respectively given by [IIT 1987] (a) 14.6, 13.6 (b) 13.6, 14.6 (c) 13.6, 13.6 (d) 14.6, 14.6 The elements which occupy the peaks of ionisation energy curve, are [CBSE 2000] (a) *Na*, *K*, *Rb*, *Cs* (b) *Na*, *Mg*, *Cl*, *I* (c) Cl, Br, I, F(d) He, Ne, Ar, Kr Which is the correct order of ionic sizes (At. No. : Ce = 58, Sn = 50, Yb = 70 and Lu = 71) [AIEEE 2002] (a) Ce > Sn > Yb > Lu(b) Sn > Ce > Lu > Yb(c) Lu > Yb > Sn > Ce(d) Sn > Yb > Ce > LuA sudden large jump between the values of second and third ionisation energies of an element would be associated with the electronic configuration [CBSE PMT 1992; AFMC 1998; CPMT 1999] (a) $1s^2, 2s^2p^6, 3s^1$ (b) $1s^2, 2s^2p^6, 3s^2p^1$ (c) $1s^2, 2s^2p^6, 3s^2p^2$ (d) $1s^2, 2s^2p^6, 3s^2$ Which element having following electronic configurations has minimum ionization potential [NCERT 1978; KCET 1991; CBSE PMT 1991; Pb. PET 1999; BHU 2000] (a) $1s^1$ (b) $1s^2, 2s^2 2p^6$ (d) $1s^2, 2s^2, 2p^2$ (c) $1s^2, 2s^2, 2p^6, 3s^1$ Arrange F, Cl, O, N in the decreasing order of electronegativity (a) O > F > N > Cl(b) F > N > Cl > O(c) Cl > F > N > O(d) F > O > N > ClIonic radii of [IIT-JEE 1999] (b) $^{35}Cl^- <^{37}Cl^-$ (a) $Ti^{4+} < Mn^{7+}$ (d) $P^{3+} > P^{5+}$ (c) $K^+ > Cl^-$ Which of the following have high electron affinity [BHU 2000, 05] (a) *F* (b) *Cl* (c) N (d) *O* In which block 106° element belongs [DCE 2000] (b) *p*-block (a) s-block (c) *d*-block (d) *f*-block

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Chemical Periodicity 639



640 Chemical Periodicity

				Reason	:	A set of half filled orbitals containing one electron each with their spin parallel provides extra stability to the system.	
Read the assertion and reason carefully to mark the correct option out o					Assertion		1E of N is more than that of Ω as well as C
 the options given below : (a) If both assertion and reason are true and the reason is the correct 					Reason	:	This is due to difference in reactivity towards
	explanation	n of th	ne assertion.	17.	Assertion		NO ion is isoelectronic with CN ion
(b)	If both assertion and reason are true but reason is not the correct explanation of the assertion.			17.	Reason :	:	Isoelectronic ions have same number of
(c)	If assertion	n is tru	ue but reason is false.	18	Assertion		Outermost electronic configuration of most
(d)	If the assertion and reason both are false.			10.	/ loser crom	•	electronositive elements is <i>ns nn</i> .
(e)	If assertion	i is fal	se but reason is true.		Reason	:	<i>ns nr</i> is stable due to half filled subshell.
				19.	Assertion :		First ionization energy for nitrogen is lower than
1.	Assertion : Positive ions will be wider than parent atoms[AIIMS			1999]	1000111011	•	oxygen.
	Reason	:	Nuclear charge pulls them closer		Reason	:	Across a period effective nuclear charge
2.	Assertion	:	Dinegative anion of oxygen (O^{2-}) is quite common but dinegative anion of sulphur				decreases. [AIIMS 2005]
			(S^{2-}) is less common				
	Reason		Covalency of overgan is two				
	Reason	•					
	۰. ۱						
3.	Assertion	•	The atomic radii of calcium is smaller than sodium.				
	Reason	:	Calcium has a lower nuclear charge than sodium [AIIN	IS 1999]		
4.	Assertion	:	The first ionization energy of Be is greater than that of B				
	Reason	:	2 <i>p</i> orbital is lower in energy than 2 <i>s</i> of [IIT-IEE Screening 2000]				
5	Assertion		LiCl is predominantly a covalent compound				
о. с	Reason		Electronogativity difference between <i>Li</i> and <i>Cl</i>				
	A .:	•	is too small [IIT-JEE 1998]				
0.	Assertion	:	<i>F</i> atom has a less negative electron amnity than <i>Cl</i> atom				
	Reason	:	Additional electrons are repelled more effectively				
			by 3 p electrons in Cl atom than by 2 p				
			electrons in F atom				
			[IIT-JEE 1998]				
7.	Assertion	:	Noble gases have maximum electron affinity. [AIIMS 19	95]			
	Reason	:	High electron affinity shows that the electron is loosely bonded to the atom.				
8.	Assertion	:	The first ionisation energy of <i>Be</i> is greater than boron [AIIMS 2002]				
	Reason	:	2 <i>p</i> orbitals have lower energy than 2 <i>s</i> orbitals.				
9.	Assertion	:	Atomic number of the element ununbium is 112.				
	Reason	:	Name for digits 1 and 2 is un-and bi-respectively in latin words.				
10.	Assertion	:	Chemistry of Actinoids is more complicated than Lanthanoids.				
	Reason	:	Actinoid elements are radioactive.				
11.	Assertion	:	lonization enthalpy is always negative.				
	Reason	:	Energy is always released when electrons are removed.				
12.	Assertion	:	Shielding effect increases as we go down the group.				
	Reason	:	More is the number of electrons in the penultimate shell, more is shielding.				
13.	Assertion	:	lonization potential across the period is <i>Na < Al < Mg < Si.</i>				
	Reason	:	lonization potential decreases with decrease in atomic size.				
14.	Assertion	:	More is the electron affinity greater is the reducing character.				
	Reason	:	Reducing character depends on number of electrons gained.				
15.	Assertion	:	Ground state configuration of Cr is $3d$, $4s$.				

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